

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 300

Rack travel in mm : 5.50

Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 16.5

Tolerance
cm³/1000 strokes : ± 3.0

Check tolerance
cm³/1000S. : ± 6.0

Spread

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 700
guide sleeve
travel mm : 4.55
Tolerance mm : ± 0.25

Rated speed rpm : 1050
guide sleeve
travel mm : 7.70
Tolerance mm : ± 0.10

Rated speed rpm : 300
guide sleeve
travel mm : 0.75
Tolerance mm : ± 0.25

Rated speed rpm : 500
guide sleeve
travel mm : 3.45
Tolerance mm : ± 0.25

Rated speed rpm : 1165
guide sleeve
travel mm : 9.55
Tolerance mm : ± 0.25

GUIDE SLEEVE POSITION

A02

control lever
position degree : - 1
Rated speed rpm : 1120

Rack travel in mm : 16.50
Tolerance mm : ± 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 600
Aneroid pressure
hPa : 1300

Del. quantity
cm³/1000 strokes : 275.5

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Spread

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 52.0
tolerance degree : ± 4.0

control lever
position degree : 117.0
tolerance degree : ± 4.0

RATED SPEED
rack travel mm : 12.60
Rated speed rpm : 1000
Tolerance 1/min : ± 5

rack travel mm : 4.00
Rated speed rpm : 1125
Tolerance 1/min : ± 15

rack travel mm : 0.50
Tolerance mm : ± 0.50
Rated speed rpm : 1230

LOW IDLE

control lever
position degree : 82.0
tolerance degree : ± 4.0

control lever
position degree : 17.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 100
CRT mm min. : $>$ 9.20

Testing:

Rated speed rpm : 300
rack travel mm : 5.50
Tolerance mm : \pm 0.10

Rated speed rpm : 325

TORQUE CONTROL

Rated speed rpm : 600
rack travel mm : 14.25
Tolerance mm : \pm 0.05

Rated speed rpm : 950
rack travel mm : 13.75
Tolerance mm : \pm 0.05

Rated speed rpm : 750
rack travel mm : 14.25
Tolerance mm : \pm 0.05

Rated speed rpm : 840
rack travel mm : 13.90
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1300
rack travel mm : 14.25
Tolerance mm : \pm 0.05

Rated speed rpm : 500
Pressure hPa : -

MEASUREMENT

Rated speed rpm : 500
Pressure hPa : 760
rack travel mm : 2.25
Tolerance mm : \pm 0.15

Pressure hPa : 500
rack travel mm : 0.90
Tolerance mm : \pm 0.10

Start interlock

Rated speed rpm : $>$ 100
Rated speed rpm : $<$ 220

Check
speed 1/min : $>$ 80
Check
speed 1/min : $<$ 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1300
Rated speed rpm : 950
Del. quantity
cm³/1000 strokes : 245.5
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000s. : \pm 5.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000s. : 12.0

Aneroid pressure
hPa : 1300
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 267.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000s. : \pm 5.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000s. : 12.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 146.5
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000s. : \pm 4.0

Spreed
Tolerance
cm3/1000 strokes : 5.0
Check tolerance
cm3/1000S. : 9.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm3/1000 strokes : 236.0
Tolerance
cm3/1000 strokes : \pm 10.0
Check tolerance
cm3/1000S. : \pm 14.0

LOW IDLE

Rated speed rpm : 300

Rack travel in mm : 5.50
Tolerance mm : \pm 0.10
Del. quantity
cm3/1000 strokes : 16.5
Tolerance
cm3/1000 strokes : \pm 3.0
Check tolerance
cm3/1000S. : \pm 6.0
Spreed
Tolerance
cm3/1000 strokes : 8.0
Check tolerance
cm3/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 21.07.97
Test oil : ISO 4113

Combination No. : 0 400 846 258

Injection pump
Pump designation : PES6A90D410RS2293Z
EP type number : 0 410 896 037

Governor
Governor design. : RQV300...1425AB740L
Governor no. : 0 420 212 037

Cust. part No. :

Customer-spec. information
Customer : MB-NFZ

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holder
assembly : 0 681 343 009

Opening pressure
bar : 173.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Del. quantity
cm³/1000 strokes : 74.5

Tolerance
cm³/1000 strokes : ± 0.5

Check tolerance
cm³/1000S. : ± 2.5

Speed

Tolerance
cm³/1000 strokes : 3.0

Check tolerance
cm³/1000S. : 4.5

Rated speed rpm : 300

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1375
Aneroid pressure
hPa : -

Del. quantity
cm³/1000 strokes : 74.5
Tolerance
cm³/1000 strokes : ± 0.5
Check tolerance
cm³/1000S. : ± 2.5
Spreed
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000S. : 4.5

RATED SPEED

rack travel mm : 4.00
rack travel mm : 4.00

LOW IDLE

Setting point w/out bumper spring

Rated speed rpm : 100

Testing:

rack travel mm : 2.00

Start interlock

Rated speed rpm : > 100

Check
speed 1/min : > 80

STARTING FUEL DELIVERY

Rated speed rpm : 100

LOW IDLE

Rated speed rpm : 300

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 22.07.97
Test oil : ISO 4113
Combination No. : 0 400 846 443
Injection pump
Pump designation : PES6A90D410RS2293Z
EP type number : 0 410 896 037
Governor
Governor design. : RQV300...1400AB1066
: -1DL
Governor no. : 0 420 214 251
Cust. part No. :

Customer-spec. information
Customer : MB-NFZ
Motor : OM352A
Power KW : 126.0

TEST BENCH REQUIREMENTS

Inlet line : 1.2
Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1 419 992 198
Inlet press. bar : 1.5
Test nozzle holder
assembly : 0 681 343 009
Opening pressure
bar : 173.5
Tolerance bar : ± 1.5
Test lines : 1 680 750 014
Outside diameter : 6.0

A07

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0
Prestroke mm : 2.05
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10
Rack travel in mm : 10.50
Tolerance mm : ± 1.50
Firing order : 1- 5- 3- 6- 2-
: 4
Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1400
Rack travel in mm : 12.45
Tolerance mm : ± 0.05
Del. quantity
cm³/1000 strokes : 74.5
Tolerance
cm³/1000 strokes : ± 0.5
Check tolerance
cm³/1000S. : ± 2.5
Speed

Tolerance
cm³/1000 strokes : 3.0

Check tolerance
cm³/1000S. : 4.5

Rated speed rpm : 300

Rack travel in mm : 9.00

Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 12.0

Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 5.0

Spread
Tolerance
cm³/1000 strokes : 2.0

Check tolerance
cm³/1000S. : 4.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1500
guide sleeve
travel mm : 8.55
Tolerance mm : \pm 0.05

Rated speed rpm : 300
guide sleeve
travel mm : 1.05
Tolerance mm : \pm 0.25

Rated speed rpm : 500
guide sleeve
travel mm : 2.55
Tolerance mm : \pm 0.25

Rated speed rpm : 750
guide sleeve
travel mm : 4.20
Tolerance mm : \pm 0.10

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1500

Rack travel in mm : 16.50

A08

Tolerance mm : \pm 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1400

Aneroid pressure
hPa : 700

Del. quantity
cm³/1000 strokes : 74.5

Tolerance
cm³/1000 strokes : \pm 0.5

Check tolerance
cm³/1000S. : \pm 2.5

Spread
Tolerance
cm³/1000 strokes : 3.0

Check tolerance
cm³/1000S. : 4.5

CONTROL LEVER

control lever
position degree : 114.0
tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 11.40
Rated speed rpm : 1445
Tolerance 1/min : \pm 5

rack travel mm : 4.00
Rated speed rpm : 1595
Tolerance 1/min : \pm 15

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 1750

LOW IDLE

control lever
position degree : 76.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 100

CRT mm min. : $>$ 10.50

Testing:

Rated speed rpm : 300

rack travel mm : 9.00
 Tolerance mm : \pm 0.10
 Rated speed rpm : 625

TORQUE CONTROL

Rated speed rpm : 1400
 rack travel mm : 12.45
 Tolerance mm : \pm 0.05

Rated speed rpm : 700
 rack travel mm : 13.75
 Tolerance mm : \pm 0.05

Rated speed rpm : 1000
 rack travel mm : 13.40
 Tolerance mm : \pm 0.10

Rated speed rpm : 1200
 rack travel mm : 12.75
 Tolerance mm : \pm 0.15

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
 Pressure hPa : 700
 rack travel mm : 13.75
 Tolerance mm : \pm 0.05

Rated speed rpm : 500
 Pressure hPa : -
 rack travel mm : 12.35
 Tolerance mm : \pm 0.05

MEASUREMENT

Rated speed rpm : 500
 Pressure hPa : 225
 rack travel mm : 12.70
 Tolerance mm : \pm 0.10

Pressure hPa : 350
 rack travel mm : 13.25
 Tolerance mm : \pm 0.05

Start interlock

Rated speed rpm : $>$ 100
 Rated speed rpm : $<$ 220

Check
 speed 1/min : $>$ 80

Check
 speed 1/min : $<$ 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
 hPa : 700
 Rated speed rpm : 700
 Del. quantity
 cm³/1000 strokes : 76.0
 Tolerance
 cm³/1000 strokes : \pm 2.0
 Check tolerance
 cm³/1000S. : \pm 4.5

Aneroid pressure
 hPa : -
 Rated speed rpm : 500
 Del. quantity
 cm³/1000 strokes : 56.0
 Tolerance
 cm³/1000 strokes : \pm 1.0
 Check tolerance
 cm³/1000S. : \pm 3.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
 rack travel mm : 15.60
 Tolerance mm : \pm 0.20
 Del. quantity
 cm³/1000 strokes : 78.0
 Tolerance
 cm³/1000 strokes : \pm 5.0
 Check tolerance
 cm³/1000S. : \pm 8.0

LOW IDLE

Rated speed rpm : 300
 Rack travel in mm : 9.00
 Tolerance mm : \pm 0.10
 Del. quantity
 cm³/1000 strokes : 12.0
 Tolerance
 cm³/1000 strokes : \pm 3.0
 Check tolerance
 cm³/1000S. : \pm 5.0
 Speed
 Tolerance
 cm³/1000 strokes : 2.0

Check tolerance
cm³/1000S. : 4.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 13.06.95

Test oil : ISO 4113

Combination No. : 0 400 866 194

Injection pump

Pump designation : PES6A100D320/3RS2763

EP type number : 0 410 806 006

Governor

Governer design. : RSV415...1175A0C2190

: -69R

Governer no. : 0 420 233 308

Cust. part No. : 3921135

Customer-spec. information

Customer : CDC

Motor : 6 CT

Power KW : 129.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C : 40

Tolerance °C : ± 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 1.5

Tolerance bar : ± 0.1

Test nozzle holde assembly

: 1 688 901 101

Opening pressure

bar : 208.5

Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0

Tolerance bar : ± 1.0

Prestroke mm : 2.85

Tolerance mm : ± 0.05

Check

tolerance mm : ± 0.10

Rack travel in mm : 10.50

Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

Start of delivery blocking

*NW after s.o.d. : 11.00

Tolerance : ± 0.50

Check

tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1175

Rack travel in mm : 10.45

Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 99.5

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 3.0

Spread

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 6.5

Rack travel in mm : 5.20
Tolerance mm : ± 0.10

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : ± 0.20

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1175
Aneroid pressure
hPa : -
Del. quantity
cm³/1000 strokes : 99.5
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 3.0
Spread
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 6.5

CONTROL LEVER

control lever
position degree : 110.0
tolerance degree : ± 4.0

RATED SPEED
rack travel mm : 9.40
Rated speed rpm : 1245
Tolerance 1/min : ± 5

rack travel mm : 4.00
Rated speed rpm : 1310
Tolerance 1/min : ± 5

rack travel mm : 0.85
Tolerance mm : ± 0.55
Rated speed rpm : 1400

rack travel mm : 4.00
Rated speed rpm : 1315
Tolerance 1/min : ± 15

LOW IDLE

control lever
position degree : 86.0
tolerance degree : ± 4.0

Control lever difference
Grad : 24.0
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 415
rack travel mm : 4.70
Tolerance mm : ± 0.10

Rated speed rpm : 100

CRT mm min. : > 19.00

Testing:

Rated speed rpm : 415
rack travel mm : 5.20
Tolerance mm : ± 0.10

TORQUE CONTROL

Rated speed rpm : 1175
rack travel mm : 10.45
Tolerance mm : ± 0.05

Rated speed rpm : 800
rack travel mm : 10.80

Tolerance mm : \pm 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 800
Del. quantity
cm³/1000 strokes : 103.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000s. : \pm 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 160.0
Tolerance
cm³/1000 strokes : \pm 10.0
Check tolerance
cm³/1000s. : \pm 15.0

LOW IDLE

Rack travel in mm : 5.20
Tolerance mm : \pm 0.10

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 22.07.97
Test oil : ISO 4113
Combination No. : 0 402 076 773
Injection pump
Pump designation : PES6P100A320LS3342
EP type number : 0 412 006 710
Governor
Governor design. : RSV415...1100P8A595
Governor no. : 0 421 833 461

Cust. part No. : 1824625C91

Customer-spec. information
Customer : NAVISTAR
Motor : DT-530
Power kW : 168.0

TEST BENCH REQUIREMENTS

Inlet line : 4.2
Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1 417 413 076
Inlet press. bar : 2.8
Tolerance bar : ± 0.1
Test nozzle holder
assembly : 1 688 901 101
Opening pressure
bar : 208.5
Tolerance bar : ± 1.5
Test lines : 1 680 750 015
Outside diameter : 6.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : ± 1.0
Prestroke mm : 3.00
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10
Rack travel in mm : 10.50
Tolerance mm : ± 1.50
Firing order : 1- 5- 3- 6- 2-
: 4
Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1100
Rack travel in mm : 13.25
Tolerance mm : ± 0.05
Del. quantity
cm³/1000 strokes : 146.5
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 3.0
Speed

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

Rated speed rpm : 415

Rack travel in mm : 5.50
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 24.5

Tolerance
cm³/1000 strokes : ± 2.0

Check tolerance
cm³/1000S. : ± 4.5

Spread
Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 6.5

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : ± 0.20

governor spring
pre-tension
click setting x : 3.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100
Aneroid pressure

hPa : 1200

Del. quantity
cm³/1000 strokes : 146.5

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 3.0

Spread
Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

CONTROL LEVER

control lever
position degree : 106.0
tolerance degree : ± 6.0

RATED SPEED

rack travel mm : 12.20
Rated speed rpm : 1150

Tolerance 1/min : ± 5
Check

speed 1/min : ± 10

rack travel mm : 4.00
Rated speed rpm : 1200

Tolerance 1/min : ± 5
Check

speed 1/min : ± 10

rack travel mm : 0.85
Tolerance mm : ± 0.55

Rated speed rpm : 1300

rack travel mm : 4.00
Rated speed rpm : 1205

Tolerance 1/min : ± 5
Check

speed 1/min : ± 10

LOW IDLE

control lever
position degree : 79.0
tolerance degree : ± 6.0

Setting point w/out bumper spring

Rated speed rpm : 100

CRT mm min. : > 19.00

Testing:

Rated speed rpm : 415
rack travel mm : 5.50

Tolerance mm : ± 0.10

TORQUE CONTROL

Rated speed rpm : 1100
rack travel mm : 13.25

Tolerance mm : + 0.05
Rated speed rpm : 800
rack travel mm : 14.20
Tolerance mm : + 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1200
rack travel mm : 14.20
Tolerance mm : + 0.05

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 8.90
Tolerance mm : + 0.20

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 590
rack travel mm : 12.80
Tolerance mm : + 0.20

Pressure hPa : 270
rack travel mm : 10.20
Tolerance mm : + 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 800
Del. quantity
cm³/1000 strokes : 172.0
Tolerance
cm³/1000 strokes : + 2.0
Check tolerance
cm³/1000S. : + 4.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 78.5
Tolerance
cm³/1000 strokes : + 2.0
Check tolerance
cm³/1000S. : + 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : + 0.50
Del. quantity
cm³/1000 strokes : 160.0
Tolerance
cm³/1000 strokes : + 20.0
Check tolerance
cm³/1000S. : + 25.0

LOW IDLE

Rated speed rpm : 415
Rack travel in mm : 5.50
Tolerance mm : + 0.10
Del. quantity
cm³/1000 strokes : 24.5
Tolerance
cm³/1000 strokes : + 2.0
Check tolerance
cm³/1000S. : + 4.5
Spreed
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 6.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 22.07.97
Test oil : ISO 4113
Combination No. : 0 402 076 774
Injection pump
Pump designation : PES6P100A320LS3342
EP type number : 0 412 006 710
Governor
Governor design. : RSV415...1100P8A596
Governor no. : 0 421 833 462

Cust. part No. : 1824624C91

Customer-spec. information
Customer : NAVISTAR
Motor : DT-530
Power KW : 187.0

TEST BENCH REQUIREMENTS

Inlet line : 4.2
Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1 417 413 076
Inlet press. bar : 2.8
Tolerance bar : ± 0.1
Test nozzle holder
assembly : 1 688 901 101
Opening pressure
bar : 208.5
Tolerance bar : ± 1.5
Test lines : 1 680 750 015
Outside diameter : 6.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : ± 1.0
Prestroke mm : 3.00
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10
Rack travel in mm : 10.50
Tolerance mm : ± 1.50
Firing order : 1- 5- 3- 6- 2-
: 4
Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1100
Rack travel in mm : 12.60
Tolerance mm : ± 0.05
Del. quantity
cm³/1000 strokes : 130.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 3.0
Spreed

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

Rated speed rpm : 415

Rack travel in mm : 5.50

Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 24.5

Tolerance
cm³/1000 strokes : ± 2.0

Check tolerance
cm³/1000S. : ± 4.5

Spread
Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 6.5

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : ± 0.20

governor spring
pre-tension
click setting x : 3.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100
Aneroid pressure

hPa : 1200

Del. quantity
cm³/1000 strokes : 130.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 3.0

Spread
Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

CONTROL LEVER

control lever
position degree : 108.0
tolerance degree : ± 6.0

RATED SPEED

rack travel mm : 11.60

Rated speed rpm : 1150

Tolerance 1/min : ± 5

Check
speed 1/min : ± 10

rack travel mm : 4.00

Rated speed rpm : 1200

Tolerance 1/min : ± 5

Check
speed 1/min : ± 10

rack travel mm : 0.85

Tolerance mm : ± 0.55

Rated speed rpm : 1300

rack travel mm : 4.00

Rated speed rpm : 1205

Tolerance 1/min : ± 5

Check
speed 1/min : ± 10

LOW IDLE

control lever
position degree : 80.0
tolerance degree : ± 6.0

Setting point w/out bumper spring

Rated speed rpm : 100

CRT mm min. : > 19.00

Testing:

Rated speed rpm : 415

rack travel mm : 5.50

Tolerance mm : ± 0.10

TORQUE CONTROL

Rated speed rpm : 1100

rack travel mm : 12.60

Tolerance mm : \pm 0.05
Rated speed rpm : 800
rack travel mm : 13.50
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 800
Pressure hPa : 1200
rack travel mm : 13.50
Tolerance mm : \pm 0.20

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 8.80
Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 800

Pressure hPa : 585
rack travel mm : 12.40
Tolerance mm : \pm 0.20

Pressure hPa : 290
rack travel mm : 10.00
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 800
Del. quantity
cm³/1000 strokes : 155.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 77.5
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 21.00
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 153.0
Tolerance
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000S. : \pm 25.0

LOW IDLE

Rated speed rpm : 415
Rack travel in mm : 5.50
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 24.5
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Speed
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 6.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 22.07.97
Test oil : ISO 4113

Combination No. : 0 402 076 775

Injection pump
Pump designation : PES6P100A320LS3342
EP type number : 0 412 006 710

Governor
Governor design. : RSV415...1100P8A597
Governor no. : 0 421 833 463

Cust. part No. : 1824626C91

Customer-spec. information
Customer : NAVISTAR
Motor : DT-530
Power KW : 153.0

TEST BENCH REQUIREMENTS

Inlet Line : 4.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 076

Inlet press. bar : 2.8
Tolerance bar : ± 0.1

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : ± 1.0

Prestroke mm : 3.00
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 12.55
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 128.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000s. : ± 3.0

Spread

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

Rated speed rpm : 415

Rack travel in mm : 5.60

Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 24.5

Tolerance
cm³/1000 strokes : ± 2.0

Check tolerance
cm³/1000S. : ± 4.5

Speed
Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 6.5

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : ± 0.20

governor spring
pre-tension
click setting x : 3.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100
Aneroid pressure
hPa : 1200

Del. quantity
cm³/1000 strokes : 128.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 3.0

Speed
Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

CONTROL LEVER

control lever
position degree : 107.5
tolerance degree : ± 6.0

RATED SPEED
rack travel mm : 11.50

Rated speed rpm : 1150
Tolerance 1/min : ± 5

Check
speed 1/min : ± 10

rack travel mm : 4.00
Rated speed rpm : 1200

Tolerance 1/min : ± 5
Check
speed 1/min : ± 10

rack travel mm : 0.85
Tolerance mm : ± 0.55

Rated speed rpm : 1300

rack travel mm : 4.00
Rated speed rpm : 1205

Tolerance 1/min : ± 5
Check
speed 1/min : ± 10

LOW IDLE

control lever
position degree : 78.5
tolerance degree : ± 6.0

Setting point w/out bumper spring

Rated speed rpm : 100

CRT mm min. : > 19.00

Testing:

Rated speed rpm : 415
rack travel mm : 5.60

Tolerance mm : ± 0.10

TORQUE CONTROL

Rated speed rpm : 1100
rack travel mm : 12.55

Tolerance mm : \pm 0.05
Rated speed rpm : 800
rack travel mm : 13.40
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 800
Pressure hPa : 1200
rack travel mm : 13.40
Tolerance mm : \pm 0.10

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 8.90
Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 800
Pressure hPa : 510
rack travel mm : 12.20
Tolerance mm : \pm 0.20

Pressure hPa : 250
rack travel mm : 10.00
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 800
Del. quantity
cm³/1000 strokes : 153.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 78.5
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 150.0
Tolerance
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000S. : \pm 25.0

LOW IDLE

Rated speed rpm : 415
Rack travel in mm : 5.60
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 24.5
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Spreed
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 6.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 17.07.97
Test oil : ISO 4113

Combination No. : 0 402 196 709

Injection pump
Pump designation : PES6P120A720RS3354
EP type number : 0 412 026 781

Governor
Governor design. : RE30
Governor no. :

Cust. part No. : RE 67771

Customer-spec. information
Customer : DEERE
Motor : 6081HRW06
Power KW : 149.0

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 077

Inlet press. bar : 2.0
Tolerance bar : ± 0.1

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter : 3.0
x length mm : 600

REMARKS

Pump-specific values
in Section (B)
must be observed!

(A) INJECTION PUMP SETTINGS
No basic setting.
Setting of constant delivery
under Section C.

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : ± 1.0

Prestroke mm : 3.60
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

Start of delivery mark

*NW after s.o.d. : 8.50
Tolerance : ± 0.50
Check
tolerance *NW : ± 0.75

Barrel no. : 1

Beginning of delivery difference

and maximum rack
travel : 15.00
Tolerance mm : ± 0.50
Difference * CS : 2.50

(B) POSITIONER TESTING

Warm-up time: 3 minutes at
n=600 min⁻¹, Uact = 2.5 V

TESTING & SETTING RACK TRAVEL SENSOR POSITION

Engine speed min⁻¹: 0

Setting point
(P, R and H pump)

Uact V : 3.100
CRT mm : 13.00
Tolerance mm : +/- 0.05
Check
tolerance mm : +/- 0.10

Check value
(P, R and H pump)

Uact V : 1.700
CRT mm : 6.15
Tolerance mm : +/- 0.25
Check
tolerance mm : +/- 0.30

Setting point
(M pump)

Uact V : 3.100
CRT mm : 12.50
Tolerance mm : +/- 0.05
Check
tolerance mm : +/- 0.10

Check value
(M pump)

Uact V : 1.700
CRT mm : 5.50
Tolerance mm : +/- 0.25
Check
tolerance mm : +/- 0.30

Stop position

Uact V : Value with
deenergised adjusting magnet
and control rod in
stop position.

CRT mm : 0.75
Tolerance mm : +/- 0.25
Check

tolerance mm : +/- 0.35

ENGINE-SPEED SENSOR (ALL P and R pumps not H and M pumps)

Test with control rod
in stop position

Engine speed min⁻¹: 60
Amplitude V : 1.4
Tolerance V : +/- 0.6
Check
tolerance V : +/- 1.20

Engine speed min⁻¹: 600
Difference
Amplitude to
Amplitude V : max.1.4

(C) INJECTION PUMP WITH POSITIONER

TEST POINT V1

Rated speed rpm : 1100
Uact V : 2.880
Del. quantity
cm³/1000 strokes : 140.0
Tolerance
cm³/1000 strokes : +/- 1.0
Check tolerance
cm³/1000S. : +/- 3.0
Speed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0
FUEL DELIVERY CHARACTERISTICS

Rated speed rpm : 700
Uact V : 2.880
Del. quantity
cm³/1000 strokes : 141.5
Tolerance
cm³/1000 strokes : +/- 3.0
Check tolerance
cm³/1000S. : +/- 6.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Rated speed rpm : 425
Uact V : 1.610

Del. quantity
cm³/1000 strokes : 22.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Spreed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 10.0

TEST POINT L1

Rated speed rpm : 425
Uact V : 1.610
Tolerance Volt : \pm 0.060
Check tolerance
Volt : \pm 0.060

STARTING FUEL DELIVERY

Rated speed rpm : 100
Uact V : 4.600
Del. quantity
cm³/1000 strokes : 105.0
Tolerance
cm³/1000 strokes : \pm 10.0
Check tolerance
cm³/1000S. : \pm 13.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 17.07.97
Test oil : ISO 4113

Combination No. : 0 402 196 710

Injection pump
Pump designation : PES6P120A72ORS3354
EP type number : 0 412 026 781

Governor
Governor design. : RE30
Governor no. :

Cust. part No. : RE 67448

Customer-spec. information
Customer : DEERE
Motor : 6081AT002
Power KW : 135.0

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 077

Inlet press. bar : 2.0
Tolerance bar : ± 0.1

Test nozzle holde
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter : 3.0
x length mm : 600

REMARKS

Pump-specific values
in Section (B)
must be observed!

(A) INJECTION PUMP SETTINGS
No basic setting.
Setting of constant delivery
under Section C.

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : ± 1.0

Prestroke mm : 3.60
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

Start of delivery mark

*NW after s.o.d. : 7.00
Tolerance : ± 0.50
Check
tolerance *NW : ± 0.75

Barrel no. : 1

Beginning of delivery differende

and maximum rack
travel : 15.00
Tolerance mm : ± 0.50
Difference * CS : 2.50

(B) POSITIONER TESTING

Warm-up time: 3 minutes at
n=600 min-1, Uact = 2.5 V

TESTING & SETTING RACK TRAVEL SENSOR POSITION

Engine speed min-1: 0

Setting point
(P, R and H pump)

Uact V : 3.100
CRT mm : 13.00
Tolerance mm : +/- 0.05
Check
tolerance mm : +/- 0.10

Check value
(P, R and H pump)

Uact V : 1.700
CRT mm : 6.15
Tolerance mm : +/- 0.25
Check
tolerance mm : +/- 0.30

Setting point
(M pump)

Uact V : 3.100
CRT mm : 12.50
Tolerance mm : +/- 0.05
Check
tolerance mm : +/- 0.10

Check value
(M pump)

Uact V : 1.700
CRT mm : 5.50
Tolerance mm : +/- 0.25
Check
tolerance mm : +/- 0.30

Stop position

Uact V : Value with
deenergised adjusting magnet
and control rod in
stop position.

CRT mm : 0.75
Tolerance mm : +/- 0.25
Check

A27

tolerance mm : +/- 0.35

ENGINE-SPEED SENSOR
(All P and R pumps not
H and M pumps)

Test with control rod
in stop position

Engine speed min-1: 60
Amplitude V : 1.4
Tolerance V : +/- 0.6
Check
tolerance V : +/- 1.20

Engine speed min-1: 600
Difference
Amplitude to
Amplitude V : max.1.4

(C) INJECTION PUMP WITH POSITIONER

TEST POINT V1

Rated speed rpm : 1100
Uact V : 2.880
Del. quantity
cm³/1000 strokes : 140.0
Tolerance
cm³/1000 strokes : +/- 1.0
Check tolerance
cm³/1000S. : +/- 3.0
Speed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0
FUEL DELIVERY CHARACTERISTICS

Rated speed rpm : 700
Uact V : 2.880
Del. quantity
cm³/1000 strokes : 141.5
Tolerance
cm³/1000 strokes : +/- 3.0
Check tolerance
cm³/1000S. : +/- 6.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Rated speed rpm : 425
Uact V : 1.610

Del. quantity
cm³/1000 strokes : 22.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Spreed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 10.0

TEST POINT L1

Rated speed rpm : 425
Uact V : 1.610
Tolerance Volt : \pm 0.060
Check tolerance
Volt : \pm 0.060

STARTING FUEL DELIVERY

Rated speed rpm : 100
Uact V : 4.600
Del. quantity
cm³/1000 strokes : 105.0
Tolerance
cm³/1000 strokes : \pm 10.0
Check tolerance
cm³/1000S. : \pm 13.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 17.07.97
Test oil : ISO 4113

Combination No. : 0 402 196 711

Injection pump
Pump designation : PES6P120A720RS3354
EP type number : 0 412 026 781

Governor
Governor design. : RE30
Governor no. : 0 421 890 029

Cust. part No. : RE 68148

Customer-spec. information
Customer : DEERE
Motor : 6081HDW02
Power KW : 163.0

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 077

Inlet press. bar : 2.0
Tolerance bar : ± 0.1

Test nozzle holde
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter : 3.0
x length mm : 600

REMARKS

Pump-specific values
in Section (B)
must be observed!

(A) INJECTION PUMP SETTINGS
No basic setting.
Setting of constant delivery
under Section C.

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : ± 1.0

Prestroke mm : 3.60
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

Start of delivery blocking

*NW after s.o.d. : 7.75
Tolerance : ± 0.50
Check
tolerance *NW : ± 0.75

Barrel no. : 1

Beginning of delivery differende

and maximum rack
travel : 15.00
Tolerance mm : ± 0.50
Difference * CS : 2.50

(B) POSITIONER TESTING

Warm-up time: 3 minutes at
n=600 min⁻¹, Uact = 2.5 V

TESTING & SETTING RACK TRAVEL SENSOR POSITION

Engine speed min⁻¹: 0

Setting point
(P, R and H pump)

Uact V : 3.100
CRT mm : 13.00
Tolerance mm : +/- 0.05
Check
tolerance mm : +/- 0.10

Check value
(P, R and H pump)

Uact V : 1.700
CRT mm : 6.15
Tolerance mm : +/- 0.25
Check
tolerance mm : +/- 0.30

Setting point
(M pump)

Uact V : 3.100
CRT mm : 12.50
Tolerance mm : +/- 0.05
Check
tolerance mm : +/- 0.10

Check value
(M pump)

Uact V : 1.700
CRT mm : 5.50
Tolerance mm : +/- 0.25
Check
tolerance mm : +/- 0.30

Stop position

Uact V : Value with
deenergised adjusting magnet
and control rod in
stop position.

CRT mm : 0.75
Tolerance mm : +/- 0.25
Check

tolerance mm : +/- 0.35

ENGINE-SPEED SENSOR (All P and R pumps not H and M pumps)

Test with control rod
in stop position

Engine speed min⁻¹: 60
Amplitude V : 1.4
Tolerance V : +/- 0.6
Check
tolerance V : +/- 1.20

Engine speed min⁻¹: 600
Difference
Amplitude to
Amplitude V : max.1.4

(C) INJECTION PUMP WITH POSITIONER

TEST POINT V1

Rated speed rpm : 1100
Uact V : 2.880
Del. quantity
cm³/1000 strokes : 140.0
Tolerance
cm³/1000 strokes : +/- 1.0
Check tolerance
cm³/1000S. : +/- 4.0
Speed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0
FUEL DELIVERY CHARACTERISTICS

Rated speed rpm : 700
Uact V : 2.880
Del. quantity
cm³/1000 strokes : 141.5
Tolerance
cm³/1000 strokes : +/- 3.0
Check tolerance
cm³/1000S. : +/- 6.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Rated speed rpm : 425
Uact V : 1.610

Del. quantity
cm³/1000 strokes : 22.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0
Speed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 10.0

TEST POINT L1

Rated speed rpm : 425
Uact V : 1.610
Tolerance Volt : ± 0.060
Check tolerance
Volt : ± 0.060

STARTING FUEL DELIVERY

Rated speed rpm : 100
Uact V : 4.600
Del. quantity
cm³/1000 strokes : 105.0
Tolerance
cm³/1000 strokes : ± 10.0
Check tolerance
cm³/1000S. : ± 13.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 17.07.97
Test oil : ISO 4113

Combination No. : 0 402 196 712

Injection pump
Pump designation : PES6P110A320RS3386
EP type number : 0 412 016 757

Governor
Governor design. : RE30
Governor no. : 0 421 890 044

Cust. part No. : RE 69563

Customer-spec. information
Customer : DEERE
Motor : 6068HDW55
Power KW : 127.0

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 077

Inlet press. bar : 2.0
Tolerance bar : ± 0.1

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter : 3.0
x length mm : 600

REMARKS

Pump-specific values
in Section (B)
must be observed!

(A) INJECTION PUMP SETTINGS
No basic setting.
Setting of constant delivery
under Section C.

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : ± 1.0

Prestroke mm : 3.60
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

Start of delivery blocking

*NW after s.o.d. : 6.50
Tolerance : ± 0.50
Check
tolerance *NW : ± 0.75

Barrel no. : 1

Beginning of delivery difference

and maximum rack
travel : 15.00
Tolerance mm : ± 0.50
Difference ° CS : 2.00

(B) POSITIONER TESTING

Warm-up time: 3 minutes at
n=600 min⁻¹, Uact = 2.5 V

TESTING & SETTING RACK TRAVEL SENSOR POSITION

Engine speed min⁻¹: 0

Setting point
(P, R and H pump)

Uact V : 3.100
CRT mm : 13.00
Tolerance mm : +/- 0.05
Check
tolerance mm : +/- 0.10

Check value
(P, R and H pump)

Uact V : 1.700
CRT mm : 6.15
Tolerance mm : +/- 0.25
Check
tolerance mm : +/- 0.30

Setting point
(M pump)

Uact V : 3.100
CRT mm : 12.50
Tolerance mm : +/- 0.05
Check
tolerance mm : +/- 0.10

Check value
(M pump)

Uact V : 1.700
CRT mm : 5.50
Tolerance mm : +/- 0.25
Check
tolerance mm : +/- 0.30

Stop position

Uact V : Value with
deenergised adjusting magnet
and control rod in
stop position.

CRT mm : 0.75
Tolerance mm : +/- 0.25
Check

tolerance mm : +/- 0.35

ENGINE-SPEED SENSOR
(All P and R pumps not
H and M pumps)

Test with control rod
in stop position

Engine speed min⁻¹: 60
Amplitude V : 1.4
Tolerance V : +/- 0.6
Check
tolerance V : +/- 1.20

Engine speed min⁻¹: 600
Difference
Amplitude to
Amplitude V : max.1.4

(C) INJECTION PUMP WITH POSITIONER

TEST POINT V1

Rated speed rpm : 1000
Uact V : 3.180
Del. quantity
cm³/1000 strokes : 142.0
Tolerance
cm³/1000 strokes : +/- 1.0
Check tolerance
cm³/1000S. : +/- 4.0
Spreed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0
FUEL DELIVERY CHARACTERISTICS

Rated speed rpm : 600
Uact V : 3.180
Del. quantity
cm³/1000 strokes : 143.0
Tolerance
cm³/1000 strokes : +/- 3.0
Check tolerance
cm³/1000S. : +/- 6.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Rated speed rpm : 400
Uact V : 1.590

Del. quantity
cm³/1000 strokes : 16.5
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000s. : ± 6.0
Spreed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000s. : 10.0

TEST POINT L1

Rated speed rpm : 400
Uact V : 1.590
Tolerance Volt : ± 0.060
Check tolerance
Volt : ± 0.060

STARTING FUEL DELIVERY

Rated speed rpm : 100
Uact V : 4.600
Del. quantity
cm³/1000 strokes : 115.0
Tolerance
cm³/1000 strokes : ± 10.0
Check tolerance
cm³/1000s. : ± 13.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 17.07.97
Test oil : ISO 4113

Combination No. : 0 402 734 801

Injection pump
Pump designation : PES4P120A120RS7313
EP type number : 0 412 724 801

Governor
Governor design. : RQV400...1250PA1113K
Governor no. : 0 421 815 376

Cust. part No. : 3926603

Customer-spec. information
Customer : CDC
Motor : 48TA-A
Power KW : 97.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 2.0
Tolerance bar : ± 0.1

Test nozzle holde
assembly : 1 688 901 103

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : ± 1.0

Prestroke mm : 3.60
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 12.50
Tolerance mm : ± 0.50

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery blocking

*NW after s.o.d. : 5.75
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1150

Rack travel in mm : 14.85
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 173.5

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Speed

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

Rated speed rpm : 420

Rack travel in mm : 6.60
Tolerance mm : ± 0.20

Del. quantity
cm³/1000 strokes : 16.0

Tolerance
cm³/1000 strokes : ± 3.0

Check tolerance
cm³/1000S. : ± 5.0

Speed

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : Max
Rated speed rpm : 1475

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1150
Aneroid pressure
hPa : 1200
Del. quantity
cm³/1000 strokes : 173.5

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Speed

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

CONTROL LEVER

control lever
position degree : 116.0
tolerance degree : ± 6.0

RATED SPEED

rack travel mm : 13.40
Rated speed rpm : 1310
Tolerance 1/min : ± 15

rack travel mm : 4.00
Rated speed rpm : 1480
Tolerance 1/min : ± 5

rack travel mm : 0.50
Tolerance mm : ± 0.50
Rated speed rpm : 1550

LOW IDLE

control lever
position degree : 71.5
tolerance degree : ± 6.0

Control lever difference
Grad : 44.5
tolerance degree : ± 6.0

Setting point w/out bumper spring

Rated speed rpm : 300

CRT mm min. : > 7.50

Testing:

Rated speed rpm : 420
rack travel mm : 6.60
Tolerance mm : ± 0.20

Rated speed rpm : 425

TORQUE CONTROL

Rated speed rpm : 1150
rack travel mm : 14.85
Tolerance mm : \pm 0.05

Rated speed rpm : 850
rack travel mm : 13.90
Tolerance mm : \pm 0.20

Rated speed rpm : 1250
rack travel mm : 14.40
Tolerance mm : \pm 0.20

**ANEROID/ALTITUDE
COMPENSATOR TEST****SETTING**

Rated speed rpm : 1150
Pressure hPa : 1200

Rated speed rpm : 1150
Pressure hPa : -
rack travel mm : 10.50
Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 1150

Pressure hPa : 555
rack travel mm : 13.20
Tolerance mm : \pm 0.20

Pressure hPa : 290
rack travel mm : 11.50
Tolerance mm : \pm 0.15

Start interlock

Rated speed rpm : $>$ 100
Rated speed rpm : $<$ 315

Check
speed 1/min : $>$ 80
Check
speed 1/min : $<$ 325

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 850

Del. quantity
cm³/1000 strokes : 150.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure

hPa : -
Rated speed rpm : 1150
Del. quantity
cm³/1000 strokes : 82.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 12.80
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 150.0
Tolerance
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000S. : \pm 25.0

LOW IDLE

Rated speed rpm : 420
Rack travel in mm : 6.60
Tolerance mm : \pm 0.20
Del. quantity
cm³/1000 strokes : 16.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 5.0
Spreed
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 16.07.97
Test oil : ISO 4113
Combination No. : 0 402 736 807
Injection pump
Pump designation : PES6P110A120RS7214
EP type number : 0 412 716 805
Governor
Governor design. : RQV350...1100PA964
: -1K
Governor no. : 0 421 815 253
Cust. part No. : 3921771

Customer-spec. information
Customer : CDC
Motor : 6CTA-A
Power KW : 201.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2
Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 2 417 413 093
Inlet press. bar : 1.5
Test nozzle holde
assembly : 1 688 901 101
Opening pressure
bar : 208.5
Tolerance bar : ± 1.5
Test lines : 1 680 750 008
Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : ± 1.0
Prestroke mm : 4.40
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10
Rack travel in mm : 10.50
Tolerance mm : ± 1.50
Firing order : 1- 5- 3- 6- 2-
: 4
Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75
Start of delivery blocking
°NW after s.o.d. : 5.50
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75
Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1050
Rack travel in mm : 15.85
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 210.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Spread

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 350

Rack travel in mm : 5.80

Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 30.0

Tolerance
cm³/1000 strokes : ± 3.0

Check tolerance
cm³/1000S. : ± 5.0

Spread

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1000
guide sleeve

travel mm : 8.20

Tolerance mm : ± 0.10

Rated speed rpm : 350

guide sleeve

travel mm : 1.90

Tolerance mm : ± 0.10

Rated speed rpm : 450

guide sleeve

travel mm : 3.30

Tolerance mm : ± 0.20

Rated speed rpm : 600

guide sleeve

travel mm : 5.30

Tolerance mm : ± 0.20

Rated speed rpm : 1200

guide sleeve

travel mm : 9.80

Tolerance mm : ± 0.20

GUIDE SLEEVE POSITION

control lever

position degree : - 1

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1050

Aneroid pressure

hPa : 1500

Del. quantity

cm³/1000 strokes : 210.0

Tolerance

cm³/1000 strokes : ± 1.0

Check tolerance

cm³/1000S. : ± 4.0

Spread

Tolerance

cm³/1000 strokes : 5.0

Check tolerance

cm³/1000S. : 9.0

CONTROL LEVER

control lever

position degree : 120.0

tolerance degree : ± 6.0

RATED SPEED

rack travel mm : 14.50

Rated speed rpm : 1150

Tolerance 1/min : ± 5

rack travel mm : 4.00

Rated speed rpm : 1315

Tolerance 1/min : ± 15

rack travel mm : 0.50

Tolerance mm : ± 0.50

Rated speed rpm : 1400

LOW IDLE

control lever
position degree : 67.0
tolerance degree : \pm 6.0

Control lever difference
Grad : 53.0
tolerance degree : \pm 6.0

Setting point w/out bumper spring

Rated speed rpm : 275

CRT mm min. : $>$ 7.20

Testing:

Rated speed rpm : 350
rack travel mm : 5.80
Tolerance mm : \pm 0.10

Rated speed rpm : 425

TORQUE CONTROL

Rated speed rpm : 1050
rack travel mm : 15.85
Tolerance mm : \pm 0.05

Rated speed rpm : 650
rack travel mm : 13.40
Tolerance mm : \pm 0.20

Rated speed rpm : 1100
rack travel mm : 15.60
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 1050
Pressure hPa : 1500
rack travel mm : 15.85
Tolerance mm : \pm 0.05

Rated speed rpm : 1050
Pressure hPa : -
rack travel mm : 8.30
Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 1050

Pressure hPa : 845
rack travel mm : 13.80

Tolerance mm : \pm 0.20

Pressure hPa : 335
rack travel mm : 10.15
Tolerance mm : \pm 0.05

Start interlock

Rated speed rpm : $>$ 100
Rated speed rpm : $<$ 290

Check
speed 1/min : $>$ 80
Check
speed 1/min : $<$ 300

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1500
Rated speed rpm : 650
Del. quantity
cm³/1000 strokes : 193.5
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 93.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 11.50
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 155.0
Tolerance
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000S. : \pm 25.0

LOW IDLE

Rated speed rpm : 350

Rack travel in mm : 5.80
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 30.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 5.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 17.07.97
Test oil : ISO 4113
Combination No. : 0 403 466 148
Injection pump
Pump designation : PES6MW100/120RS1137
: -3
EP type number : 0 413 406 236
Governor
Governor design. : RSV550...1100MW2A335
: -8
Governor no. : 0 420 085 244
Cust. part No. : 392 9184

Customer-spec. information
Customer : CDC
Motor : 6CTA-830/2188E
Power KW : 209.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 433 047

Inlet press. bar : 1.5

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : ± 1.0

Prestroke mm : 3.55
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery blocking

°NW after s.o.d. : 9.00
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 14.55
Tolerance mm : ± 0.05

Del. quantity cm3/1000 strokes	: 170.5
Tolerance cm3/1000 strokes	: ± 1.0
Check tolerance cm3/1000S.	: ± 4.0
Speed	
Tolerance cm3/1000 strokes	: 4.0
Check tolerance cm3/1000S.	: 7.5

Rated speed rpm	: 550
Rack travel in mm	: 6.85
Tolerance mm	: ± 0.10
Del. quantity cm3/1000 strokes	: 27.5
Tolerance cm3/1000 strokes	: ± 2.0
Check tolerance cm3/1000S.	: ± 4.5
Speed	
Tolerance cm3/1000 strokes	: 3.5
Check tolerance cm3/1000S.	: 5.5

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever position degree	: - 3
Rated speed rpm	: 800
Rack travel in mm	: 0.55
Tolerance mm	: ± 0.20
governor spring pre-tension click setting x	: 3.75

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm	: 1100
-----------------	--------

Aneroid pressure hPa	: 1300
Del. quantity cm3/1000 strokes	: 170.5
Tolerance cm3/1000 strokes	: ± 1.0
Check tolerance cm3/1000S.	: ± 4.0
Speed	
Tolerance cm3/1000 strokes	: 4.0
Check tolerance cm3/1000S.	: 7.5

CONTROL LEVER

control lever position degree	: 97.0
tolerance degree	: ± 4.0

RATED SPEED	
rack travel mm	: 13.50
Rated speed rpm	: 1165
Tolerance 1/min	: ± 5

rack travel mm	: 4.00
Rated speed rpm	: 1255
Tolerance 1/min	: ± 5

rack travel mm	: 0.85
Tolerance mm	: ± 0.55
Rated speed rpm	: 1350

rack travel mm	: 4.00
Rated speed rpm	: 1265
Tolerance 1/min	: ± 15

LOW IDLE

control lever position degree	: 70.0
tolerance degree	: ± 4.0

Control lever difference Grad	: 27.0
tolerance degree	: ± 4.0

Setting point w/out bumper spring

Rated speed rpm	: 550
rack travel mm	: 6.35
Tolerance mm	: ± 0.10

Testing:

Rated speed rpm : 550
rack travel mm : 6.85
Tolerance mm : \pm 0.10

rack travel mm : 2.00
Rated speed rpm : 600
Tolerance 1/min : \pm 30

SET IDLE AUXILIARY SPRING

rack travel mm : 2.00

TORQUE CONTROL

Rated speed rpm : 1100
rack travel mm : 14.55
Tolerance mm : \pm 0.05

Rated speed rpm : 750
rack travel mm : 15.30
Tolerance mm : \pm 0.20

Rated speed rpm : 1000
rack travel mm : 15.10
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1300
rack travel mm : 15.30
Tolerance mm : \pm 0.20

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 10.95
Tolerance mm : \pm 0.10

MEASUREMENT

Rated speed rpm : 500
Pressure hPa : 620
rack travel mm : 13.25
Tolerance mm : \pm 0.20

Pressure hPa : 470
rack travel mm : 12.10
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1300
Rated speed rpm : 1000
Del. quantity
cm³/1000 strokes : 178.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 5.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 100.5
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 3.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 21.00
Tolerance mm : \pm 1.00
Del. quantity
cm³/1000 strokes : 135.0
Tolerance
cm³/1000 strokes : \pm 10.0
Check tolerance
cm³/1000S. : \pm 13.0

LOW IDLE

Rated speed rpm : 550
Rack travel in mm : 6.85
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 27.5
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Speed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 5.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 17.07.97
Test oil : ISO 4113

Combination No. : 0 400 074 896

Injection pump
Pump designation : PES4M55C320RS110
EP type number : 0 410 054 956

Governor
Governor design. : RSF375/2200M21
Governor no. : 0 420 021 148

Cust. part No. :

Customer-spec. information

Customer : MB-NFZ
Motor : OM616 2.4L ADA
Power KW : 55.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 012

Inlet press. bar : 1.0

Test nozzle holder
assembly : 1 688 901 111

Opening pressure
bar : 148.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 1.75
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 20.00

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270

Start of delivery mark

Tolerance : ± 0.20
Check
tolerance °NW : ± 0.30

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 12.65
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 37.5

Tolerance
cm³/1000 strokes : ± 0.5

Check tolerance
cm³/1000S. : ± 1.5

Speed
Tolerance
cm³/1000 strokes : 2.5

Check tolerance
cm3/1000S. : 3.0

Rated speed rpm : 375

Rack travel in mm : 6.20

Tolerance mm : \pm 0.10

Del. quantity
cm3/1000 strokes : 7.5

Tolerance
cm3/1000 strokes : \pm 0.5

Spreed
Tolerance
cm3/1000 strokes : 1.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

IDLE STAGE

Rack travel in mm : 6.00

Tolerance mm : \pm 0.10

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1000

Ref. pressure

ALDA / ADA hPa : 1100

Del. quantity
cm3/1000 strokes : 37.5

Tolerance
cm3/1000 strokes : \pm 0.5

Check tolerance
cm3/1000S. : \pm 1.5

Spreed
Tolerance

cm3/1000 strokes : 2.5

Check tolerance
cm3/1000S. : 3.0

RATED SPEED

control lever
position degree : 50.0

Rated speed rpm : 2350

rack travel mm : 8.40

Tolerance mm : \pm 0.20

Rated speed rpm : 2500

rack travel mm : 0.50

Tolerance mm : \pm 0.50

SET IDLE CONTROL LEVER POSITION

Rated speed rpm : 1000

CRT mm max. : 1.45

LOW IDLE

control lever
position degree : 10.0
tolerance degree : \pm 2.0

Setting point w/out bumper spring

Rated speed rpm : 375

rack travel mm : 6.20

SET IDLE AUXILIARY SPRING

Rated speed rpm : 450

rack travel mm : 5.20

Tolerance mm : \pm 0.10

rack travel mm : 2.00

Rated speed rpm : 780

Tolerance 1/min : \pm 50

Load pick-up

Rated speed rpm : 250

rack travel mm : $>$ 10.00

Rated speed rpm : 1000

CRT mm max. : 1.45

rack travel mm : 6.20

Rated speed rpm : 375

TORQUE CONTROL

Rated speed rpm : 1000

rack travel mm : 12.65

Tolerance mm : \pm 0.05

Rated speed rpm : 1700

rack travel mm : 12.30

Tolerance mm : \pm 0.10

Rated speed rpm : 2150

rack travel mm : 11.90

Tolerance mm : \pm 0.10

ADJUSTMENT TEST ADA/ALDA

SETTING

Rated speed rpm : 1000
Ref. pressure
ALDA / ADA hPa : 950
rack travel mm : -0.10
Tolerance mm : ± 0.10

MEASUREMENT

Rated speed rpm : 1000
Ref. pressure
ALDA / ADA hPa : 900
rack travel mm : -0.60
Tolerance mm : ± 0.10

Ref. pressure
ALDA / ADA hPa : 750
rack travel mm : -2.00
Tolerance mm : ± 0.20

FUEL DELIVERY CHARACTERISTICS

Ref. pressure
ALDA / ADA hPa : 1100
Rated speed rpm : 1700
Del. quantity
cm³/1000 strokes : 38.3
Tolerance
cm³/1000 strokes : ± 0.8
Check tolerance
cm³/1000S. : ± 1.8
Spreed
Tolerance
cm³/1000 strokes : 2.5
Check tolerance
cm³/1000S. : 3.0

Ref. pressure
ALDA / ADA hPa : 1100
Rated speed rpm : 2150
Spreed
Del. quantity
cm³/1000 strokes : 38.3
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 2.0
Spreed
Tolerance
cm³/1000 strokes : 2.5
Check tolerance
cm³/1000S. : 3.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.10
Del. quantity
cm³/1000 strokes : 52.0
Spreed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 6.0

LOW IDLE

Rated speed rpm : 375
Del. quantity
cm³/1000 strokes : 8.3
Check tolerance
cm³/1000S. : ± 1.8
Spreed
Check tolerance
cm³/1000S. : 1.5

control lever
position degree : > 49.00

control lever
position degree : < 46.50

SETTING PNEUMATIC FAST IDLE (PLA) (PLA) POSITION

control lever
position degree : 10.0
tolerance degree : ± 2.0

TESTING PNEUMATIC SHUTOFF DEVICE

Rated speed rpm : 375

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 18.07.97
Test oil : ISO 4113

Combination No. : 0 401 846 529

Injection pump
Pump designation : PE6P120A320RS3186
EP type number : 0 411 826 756

Governor
Governor design. : RQV250...1025PA921
: -4
Governor no. : 0 421 813 787

Cust. part No. : 422719-P05 V. 06/92

Customer-spec. information
Customer : VOLVO-TRUCK
Motor : TD102F (Q)
Power kW : 220.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Vibration
damper
(RoBo diaphragm) : 4.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 046

Inlet press. bar : 2.5
Tolerance bar : ± 0.1

Overflow quantity
min. l/h : 120
Tolerance l/h : ± 20.0

Test nozzle holde
assembly : 1 688 901 019

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 2.65
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.00
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 12.45
Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 198.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Speed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 250

Rack travel in mm : 5.10
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 19.0

Tolerance
cm³/1000 strokes : \pm 2.5

Check tolerance
cm³/1000S. : \pm 5.0

Speed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 7.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1080
guide sleeve
travel mm : 8.40
Tolerance mm : \pm 0.10

Rated speed rpm : 250
guide sleeve
travel mm : 1.25

Tolerance mm : \pm 0.05

Rated speed rpm : 900
guide sleeve
travel mm : 6.50
Tolerance mm : \pm 0.10

Rated speed rpm : 430
guide sleeve
travel mm : 3.65
Tolerance mm : \pm 0.15

Rated speed rpm : 700
guide sleeve
travel mm : 6.50
Tolerance mm : \pm 0.10

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1080

Rack travel in mm : 16.50
Tolerance mm : \pm 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700
Aneroid pressure
hPa : 1000

Del. quantity
cm³/1000 strokes : 198.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Speed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 62.0
tolerance degree : \pm 4.0

control lever
position degree : 117.0
tolerance degree : \pm 4.0

RATED SPEED
rack travel mm : 11.45

Rated speed rpm : 1060
Tolerance 1/min : \pm 5

rack travel mm : 4.00
Rated speed rpm : 1135
Tolerance 1/min : \pm 15

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 1250

LOW IDLE

control lever
position degree : 65.0
tolerance degree : \pm 4.0

control lever
position degree : 8.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 150

CRT mm min. : $>$ 7.00

Testing:

Rated speed rpm : 250
rack travel mm : 5.10
Tolerance mm : \pm 0.10

Rated speed rpm : 300

TORQUE CONTROL

Rated speed rpm : 700
rack travel mm : 12.45
Tolerance mm : \pm 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1000
rack travel mm : 12.45
Tolerance mm : \pm 0.05

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 9.75

Tolerance mm : \pm 0.10

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 510
rack travel mm : 2.35
Tolerance mm : \pm 0.20

Pressure hPa : 100
rack travel mm : 0.25
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 144.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000s. : \pm 4.0

LOW IDLE

Rated speed rpm : 250

Rack travel in mm : 5.10
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 19.0

Tolerance
cm³/1000 strokes : \pm 2.5

Check tolerance
cm³/1000s. : \pm 5.0

Speed
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000s. : 7.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 17.07.97

Test oil : ISO 4113

Combination No. : 0 401 848 830

Injection pump

Pump designation : PE8P110A320LS3865

EP type number : 0 411 818 728

Governor

Governer design. : RQV250...1000PA1286

Governer no. : 0 421 814 175

Cust. part No. :

Customer-spec. information

Customer : DHI

Motor : V2-8TC

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C : 40

Tolerance °C : ± 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 1.5

Tolerance bar : ± 0.1

Overflow quantity

min. l/h : 110

Tolerance l/h : ± 20.0

Test nozzle holde

assembly : 1 688 901 101

Opening pressure

bar : 208.5

Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0

Tolerance bar : ± 1.0

Prestroke mm : 4.00

Tolerance mm : ± 0.05

Check

tolerance mm : ± 0.10

Rack travel in mm : 10.50

Tolerance mm : ± 1.50

Firing order : 8- 7- 2- 6- 3

: - 5- 4- 1

Phasing : 0-45-90-135-180

: -225-270-315

Tolerance : ± 0.50

Check

tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.50

Check

tolerance °NW : ± 0.75

Barrel no. : 8

BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 13.00

Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 142.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Speed

Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 10.0

Rated speed rpm : 250

Rack travel in mm : 8.20

Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 25.0

Tolerance
cm³/1000 strokes : ± 3.0

Check tolerance
cm³/1000S. : ± 6.0

Speed

Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 10.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1058

guide sleeve
travel mm : 8.56

Tolerance mm : ± 0.15

Rated speed rpm : 250

guide sleeve
travel mm : 1.31

Tolerance mm : ± 0.20

Rated speed rpm : 666

guide sleeve
travel mm : 5.29

Tolerance mm : ± 0.25

Rated speed rpm : 380

guide sleeve
travel mm : 3.20

Tolerance mm : ± 0.25

Rated speed rpm : 1300

guide sleeve
travel mm : 11.50

Tolerance mm : ± 0.50

GUIDE SLEEVE POSITION

control lever

position degree : - 1

Rated speed rpm : 1120

Rack travel in mm : 12.00

Tolerance mm : ± 2.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1000

Aneroid pressure
hPa : -

Del. quantity
cm³/1000 strokes : 142.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Speed

Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 10.0

CONTROL LEVER

control lever
position degree : 65.0

tolerance degree : ± 4.0

control lever
position degree : 120.0

tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 12.00

Rated speed rpm : 1045

Tolerance 1/min : ± 5

rack travel mm : 4.00

Rated speed rpm : 1155

Tolerance 1/min : ± 15

rack travel mm : 0.50

Tolerance mm : +- 0.50
Rated speed rpm : 1300

LOW IDLE

control lever
position degree : 71.0
tolerance degree : +- 4.0

control lever
position degree : 16.0
tolerance degree : +- 4.0

Setting point w/out bumper spring

Rated speed rpm : 150

CRT mm min. : > 9.60

Testing:

Rated speed rpm : 250
rack travel mm : 8.20
Tolerance mm : +- 0.10

Rated speed rpm : 400

TORQUE CONTROL

Rated speed rpm : 1000
rack travel mm : 13.00
Tolerance mm : +- 0.05

Rated speed rpm : 650
rack travel mm : 13.00
Tolerance mm : +- 0.10

Start interlock

Rated speed rpm : > 100
Rated speed rpm : < 190

Check
speed 1/min : > 80
Check
speed 1/min : < 210

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 650

Del. quantity
cm3/1000 strokes : 145.0
Tolerance
cm3/1000 strokes : +- 3.0
Check tolerance
cm3/1000S. : +- 6.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm3/1000 strokes : 125.0
Tolerance
cm3/1000 strokes : +- 20.0
Check tolerance
cm3/1000S. : +- 24.0

LOW IDLE

Rated speed rpm : 250
Rack travel in mm : 8.20
Tolerance mm : +- 0.10
Del. quantity
cm3/1000 strokes : 25.0
Tolerance
cm3/1000 strokes : +- 3.0
Check tolerance
cm3/1000S. : +- 6.0
Spreed
Tolerance
cm3/1000 strokes : 6.0
Check tolerance
cm3/1000S. : 10.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 17.07.97
Test oil : ISO 4113

Combination No. : 0 401 878 140

Injection pump
Pump designation : PE8P120A520/5RS427
EP type number : 0 411 828 048

Governor
Governor design. : RSUV300...900POA320
: -1
Governor no. : 0 421 829 107

Cust. part No. :

Customer-spec. information
Customer : MWM
Motor : TBD 234 V8
Power KW : 400.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5

Test nozzle holde
assembly : 1 688 901 019

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 2.85
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 8- 5- 4- 7
: - 2- 3- 6

Phasing : 0-30-90-120-180
: -210-270-300
Tolerance : ± 0.50
Check
tolerance *NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.50
Check
tolerance *NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 750

Rack travel in mm : 13.75
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 250.0

Tolerance
cm3/1000 strokes : \pm 1.0

Check tolerance
cm3/1000S. : \pm 4.0

Speed

Tolerance
cm3/1000 strokes : 5.0

Check tolerance
cm3/1000S. : 9.0

Rated speed rpm : 300

Rack travel in mm : 5.60
Tolerance mm : \pm 0.10

Del. quantity
cm3/1000 strokes : 23.0

Tolerance
cm3/1000 strokes : \pm 3.0
Check tolerance
cm3/1000S. : \pm 6.0

Speed
Tolerance
cm3/1000 strokes : 8.0
Check tolerance
cm3/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : \pm 0.20

governor spring
pre-tension
click setting x : 3.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 750
Aneroid pressure
hPa : -
Del. quantity
cm3/1000 strokes : 250.0

C01

Tolerance
cm3/1000 strokes : \pm 1.0

Check tolerance
cm3/1000S. : \pm 4.0

Speed
Tolerance
cm3/1000 strokes : 5.0
Check tolerance
cm3/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 119.0
tolerance degree : \pm 4.0

RATED SPEED
rack travel mm : 12.70
Rated speed rpm : 945
Tolerance 1/min : \pm 5

rack travel mm : 4.00
Rated speed rpm : 980
Tolerance 1/min : \pm 15

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 1130

LOW IDLE

control lever
position degree : 76.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 300
rack travel mm : 5.10
Tolerance mm : \pm 0.10

Testing:

Rated speed rpm : 300
rack travel mm : 5.60
Tolerance mm : \pm 0.10

rack travel mm : 2.00
Rated speed rpm : 350
Tolerance 1/min : \pm 30

TORQUE CONTROL

Dimension a mm : 3.90
Rated speed rpm : 750
rack travel mm : 13.75
Tolerance mm : \pm 0.05

Rated speed rpm : 900
rack travel mm : 13.75
Tolerance mm : \pm 0.10

Rated speed rpm : 450
rack travel mm : 13.75
Tolerance mm : \pm 0.10

Rated speed rpm : 280
rack travel mm : 15.20
Tolerance mm : \pm 0.30

STARTING FUEL DELIVERY

Rated speed rpm : 100

LOW IDLE

Rated speed rpm : 300

Rack travel in mm : 5.60
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 23.0

Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 6.0

Spread
Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 18.07.97
Test oil : ISO 4113

Combination No. : 0 402 046 350

Injection pump
Pump designation : PES6P110A72ORS531
EP type number : 0 412 016 076

Governor
Governor design. : RQV300...1100PA1016
: -7
Governor no. : 0 421 813 972

Cust. part No. :

Customer-spec. information

Customer : IVECO-UNIC
Motor : 8361.25.510

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5

Test nozzle holder
assembly : 0 681 343 009

Opening pressure
bar : 173.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter : 1.5
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 2.05
Tolerance mm : ± 0.50
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Del. quantity
cm³/1000 strokes : 121.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 3.5

Speed

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 7.5

Rated speed rpm : 300

Rack travel in mm : 6.20
Tolerance mm : \pm 0.10

Del. quantity
cm3/1000 strokes : 15.5
Tolerance
cm3/1000 strokes : \pm 2.5

Check tolerance
cm3/1000S. : \pm 5.0

Spreed
Tolerance
cm3/1000 strokes : 4.5
Check tolerance
cm3/1000S. : 7.5

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 750
guide sleeve
travel mm : 4.70
Tolerance mm : \pm 0.20

Rated speed rpm : 1145
guide sleeve
travel mm : 8.40
Tolerance mm : \pm 0.10

Rated speed rpm : 300
guide sleeve
travel mm : 1.00
Tolerance mm : \pm 0.20

Rated speed rpm : 500
guide sleeve
travel mm : 2.80
Tolerance mm : \pm 0.30

Rated speed rpm : 1350
guide sleeve
travel mm : 11.50
Tolerance mm : \pm 0.50

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1240

Rack travel in mm : 9.30
Tolerance mm : \pm 1.30

C04

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100
Aneroid pressure
hPa : 700

Del. quantity
cm3/1000 strokes : 121.0
Tolerance
cm3/1000 strokes : \pm 1.0

Check tolerance
cm3/1000S. : \pm 3.5

Spreed
Tolerance
cm3/1000 strokes : 4.0
Check tolerance
cm3/1000S. : 7.5

CONTROL LEVER

control lever
position degree : 121.0
tolerance degree : \pm 4.0

RATED SPEED
rack travel mm : 9.30
Rated speed rpm : 1145
Tolerance 1/min : \pm 5
Check
speed 1/min : \pm 10

rack travel mm : 4.00
Rated speed rpm : 1220
Tolerance 1/min : \pm 15
Check
speed 1/min : \pm 20

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 1350

rack travel mm : 4.00

LOW IDLE

control lever
position degree : 67.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 100

CRT mm min. : > 7.70

Testing:

Rated speed rpm : 300
rack travel mm : 6.20
Tolerance mm : \pm 0.10

Rated speed rpm : 430

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 700
rack travel mm : 10.35
Tolerance mm : \pm 0.05

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 9.05
Tolerance mm : \pm 0.15

MEASUREMENT

Rated speed rpm : 500
Pressure hPa : 430
rack travel mm : 9.50
Tolerance mm : \pm 0.10

Pressure hPa : 465
rack travel mm : 9.95
Tolerance mm : \pm 0.05

Start interlock

Rated speed rpm : > 100

Check
speed 1/min : > 80

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 1100
Del. quantity
cm³/1000 strokes : 97.0
Tolerance
cm³/1000 strokes : \pm 1.0

C05

Check tolerance
cm³/1000S. : \pm 3.5

STARTING FUEL DELIVERY

ESS test: With 24 V solenoid activated,
rack must reach start position in max.
control lever setting.

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 230.0
Tolerance
cm³/1000 strokes : \pm 15.0
Check tolerance
cm³/1000S. : \pm 19.0

LOW IDLE

Rated speed rpm : 300
Rack travel in mm : 6.20
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 15.5
Tolerance
cm³/1000 strokes : \pm 2.5
Check tolerance
cm³/1000S. : \pm 5.0
Speed
Tolerance
cm³/1000 strokes : 4.5
Check tolerance
cm³/1000S. : 7.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 17.07.97
Test oil : ISO 4113

Combination No. : 0 402 646 651

Injection pump
Pump designation : PE6P120A320LS7357
EP type number : 0 412 626 934

Governor
Governor design. : RQV325...975PA1190K
Governor no. : 0 421 815 450

Cust. part No. :

Customer-spec. information
Customer : LIAZ
Motor : M640T
Power KW : 280.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Test nozzle holder
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.80
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 12.00
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 725

Rack travel in mm : 14.40
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 267.0

Tolerance
cm³/1000 strokes : +- 1.0

Check tolerance
cm³/1000S. : +- 4.0

Speed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rack travel in mm : 4.10
Tolerance mm : +- 0.30

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1033
guide sleeve
travel mm : 10.20
Tolerance mm : +- 0.20

Rated speed rpm : 325
guide sleeve
travel mm : 1.43
Tolerance mm : +- 0.15

Rated speed rpm : 620
guide sleeve
travel mm : 5.01
Tolerance mm : +- 0.25

Rated speed rpm : 370
guide sleeve
travel mm : 2.00
Tolerance mm : +- 0.25

Rated speed rpm : 420
guide sleeve
travel mm : 2.64
Tolerance mm : +- 0.25

Rated speed rpm : 460
guide sleeve
travel mm : 3.02
Tolerance mm : +- 0.25

Rated speed rpm : 1141
guide sleeve
travel mm : 12.00

Tolerance mm : +- 0.25

Rated speed rpm : 1240
guide sleeve
travel mm : 13.50
Tolerance mm : +- 0.50

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1070

Rack travel in mm : 14.10
Tolerance mm : +- 1.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 725
Aneroid pressure
hPa : -
Del. quantity
cm³/1000 strokes : 267.0
Tolerance
cm³/1000 strokes : +- 1.0
Check tolerance
cm³/1000S. : +- 4.0
Speed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 70.0
tolerance degree : +- 4.0

control lever
position degree : 122.0
tolerance degree : +- 4.0

RATED SPEED

rack travel mm : 14.10
Rated speed rpm : 1020
Tolerance 1/min : +- 5

rack travel mm : 4.00
Rated speed rpm : 1125
Tolerance 1/min : +- 15

rack travel mm : 0.50
Tolerance mm : +- 0.50
Rated speed rpm : 1200

LOW IDLE

control lever
position degree : 67.0
tolerance degree : \pm 4.0

control lever
position degree : 14.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 225

CRT mm min. : $>$ 5.30

Testing:

Rated speed rpm : 325
rack travel mm : 4.10
Tolerance mm : \pm 0.30

Rated speed rpm : 350

TORQUE CONTROL

Rated speed rpm : 725
rack travel mm : 14.40
Tolerance mm : \pm 0.05

Rated speed rpm : 975
rack travel mm : 15.15
Tolerance mm : \pm 0.20

Rated speed rpm : 600
rack travel mm : 13.10
Tolerance mm : \pm 0.20

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 975
Pressure hPa : 1500
rack travel mm : 15.15
Tolerance mm : \pm 0.05

Rated speed rpm : 975
Pressure hPa : -
rack travel mm : 9.40
Tolerance mm : \pm 0.10

MEASUREMENT

Rated speed rpm : 975

Pressure hPa : 320
rack travel mm : 11.00
Tolerance mm : \pm 0.25

Pressure hPa : 590
rack travel mm : 13.50
Tolerance mm : \pm 0.05

Start interlock

Rated speed rpm : $>$ 100
Rated speed rpm : $<$ 245

Check
speed 1/min : $>$ 80
Check
speed 1/min : $<$ 265

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 975
Del. quantity
cm³/1000 strokes : 262.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000s. : \pm 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 141.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000s. : \pm 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 300.0
Tolerance
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000s. : \pm 24.0

LOW IDLE

Rack travel in mm : 4.10
Tolerance mm : \pm 0.30

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 17.07.97
Test oil : ISO 4113
Combination No. : 0 402 646 967
Injection pump
Pump designation : PE6P130A720RS7150
: -10
EP type number : 0 412 636 831
Governor
Governor design. : RQV250...900PA881-1
Governor no. : 0 421 813 982

Cust. part No. : 864988-PD4 v.06.97

Customer-spec. information
Customer : PENTA
Motor : TAMD 162 C

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Vibration
damper
(RoBo diaphragm) : 4.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 077

Inlet press. bar : 1.5

Test nozzle holde
assembly : 1 688 901 019

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 2.5
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 3.65
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 9.40
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 11.60
Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 336.0

Tolerance
cm³/1000 strokes : \pm 1.5

Check tolerance
cm³/1000S. : \pm 5.0

Speed

Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 10.0

Rated speed rpm : 250

Rack travel in mm : 4.20
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 19.5

Tolerance
cm³/1000 strokes : \pm 2.5

Check tolerance
cm³/1000S. : \pm 5.0

Speed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 925
guide sleeve
travel mm : 7.70
Tolerance mm : \pm 0.10

Rated speed rpm : 250
guide sleeve
travel mm : 1.10
Tolerance mm : \pm 0.20

Rated speed rpm : 350
guide sleeve
travel mm : 2.30

Tolerance mm : \pm 0.30

Rated speed rpm : 700
guide sleeve
travel mm : 4.80
Tolerance mm : \pm 0.30

Rated speed rpm : 985
guide sleeve
travel mm : 8.60
Tolerance mm : \pm 0.20

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 980

Rack travel in mm : 16.50
Tolerance mm : \pm 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700
Aneroid pressure
hPa : 1000

Del. quantity
cm³/1000 strokes : 336.0

Tolerance
cm³/1000 strokes : \pm 1.5

Check tolerance
cm³/1000S. : \pm 5.0

Speed

Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 10.0

CONTROL LEVER

control lever
position degree : 118.0
tolerance degree : \pm 4.0

RATED SPEED
rack travel mm : 10.60
Rated speed rpm : 930
Tolerance 1/min : \pm 5

rack travel mm : 4.00
Rated speed rpm : 1000
Tolerance 1/min : \pm 15

rack travel mm : 0.50
Tolerance mm : \pm 0.50

Rated speed rpm : 1100

LOW IDLE

control lever
position degree : 67.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 150
CRT mm min. : $>$ 6.00

Testing:

Rated speed rpm : 250
rack travel mm : 4.20
Tolerance mm : \pm 0.10

Rated speed rpm : 300

TORQUE CONTROL

Rated speed rpm : 700
rack travel mm : 11.60
Tolerance mm : \pm 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1000
rack travel mm : 11.60
Tolerance mm : \pm 0.05

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 9.40
Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 400
rack travel mm : 9.80
Tolerance mm : \pm 0.20

Pressure hPa : 680
rack travel mm : 11.30
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : -
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 228.0
Tolerance
cm³/1000 strokes : \pm 1.5
Check tolerance
cm³/1000S. : \pm 5.0

LOW IDLE

Rated speed rpm : 250
Rack travel in mm : 4.20
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 19.5
Tolerance
cm³/1000 strokes : \pm 2.5
Check tolerance
cm³/1000S. : \pm 5.0
Spreed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 23.07.97
Test oil : ISO 4113
Combination No. : 0 402 648 812
Injection pump
Pump designation : PE8P120A320LS7301
: -10
EP type number : 0 412 628 851
Governor
Governor design. : RQ300/1050PA717
Governor no. : 0 421 801 258

Cust. part No. :

Customer-spec. information
Motor : OM442 LA
Power KW : 320.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5

Overflow quantity
min. l/h : 110
Tolerance l/h : ± 10.0

Test nozzle holder
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 2.5

x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 5.25
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 20.50
Tolerance mm : ± 0.50

Firing order : 8- 7- 2- 6- 3
: - 5- 4- 1

Phasing : 0-45-90-135-180
: -225-270-315
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.10
Check
tolerance °NW : ± 0.75

Barrel no. : 8

BASIC SETTING

Rated speed rpm : 300

Rack travel in mm : 6.40
 Tolerance mm : \pm 0.10
 Del. quantity
 cm³/1000 strokes : 19.0
 Tolerance
 cm³/1000 strokes : \pm 3.0
 Check tolerance
 cm³/1000S. : \pm 6.0
 Spreed
 Tolerance
 cm³/1000 strokes : 5.0
 Check tolerance
 cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1000
 guide sleeve
 travel mm : 6.25
 Tolerance mm : \pm 0.05

Rated speed rpm : 300
 guide sleeve
 travel mm : 2.90
 Tolerance mm : \pm 0.10

Rated speed rpm : 900
 guide sleeve
 travel mm : 6.15
 Tolerance mm : \pm 0.05

Rated speed rpm : 600
 guide sleeve
 travel mm : 6.05
 Tolerance mm : \pm 0.05

Rated speed rpm : 1150
 guide sleeve
 travel mm : 9.45
 Tolerance mm : \pm 0.15

GUIDE SLEEVE POSITION

control lever
 position degree : 109
 Rated speed rpm : 600

Rack travel in mm : 20.00
 Tolerance mm : \pm 0.80

CONTROL LEVER

control lever
 position degree : 101.0
 tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 13.40
 Rated speed rpm : 1092
 Tolerance 1/min : \pm 8

rack travel mm : 4.00
 Rated speed rpm : 1150
 Tolerance 1/min : \pm 15

rack travel mm : 0.75
 Tolerance mm : \pm 0.75
 Rated speed rpm : 1300

LOW IDLE

control lever
 position degree : 76.0
 tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 300

CRT mm min. : $>$ 7.50

Testing:

Rated speed rpm : 300
 rack travel mm : 6.40
 Tolerance mm : \pm 0.10

rack travel mm : 2.00
 Rated speed rpm : 399
 Tolerance 1/min : \pm 20

TORQUE CONTROL

Rated speed rpm : 1050
 rack travel mm : 14.40
 Tolerance mm : \pm 0.10

Rated speed rpm : 850
 rack travel mm : 14.40
 Tolerance mm : \pm 0.15

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 600
Pressure hPa : 1150

MEASUREMENT

Rated speed rpm : 600
Pressure hPa : 310
rack travel mm : -3.10
Tolerance mm : ± 0.10

Pressure hPa : 470
rack travel mm : -1.60
Tolerance mm : ± 0.10

Start interlock

Rated speed rpm : > 100
Rated speed rpm : < 220

Check
speed 1/min : > 80
Check
speed 1/min : < 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 1050
Del. quantity
cm³/1000 strokes : 212.0
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 5.0
Spreed
Tolerance
cm³/1000 strokes : 7.0
Check tolerance
cm³/1000S. : 10.0

Aneroid pressure
hPa : -
Rated speed rpm : 850
Del. quantity
cm³/1000 strokes : 217.0

Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 5.0
Spreed
Tolerance
cm³/1000 strokes : 7.0
Check tolerance
cm³/1000S. : 10.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 147.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0
Spreed
Tolerance
cm³/1000 strokes : 7.0
Check tolerance
cm³/1000S. : 10.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 210.0
Tolerance
cm³/1000 strokes : ± 10.0
Check tolerance
cm³/1000S. : ± 14.0

LOW IDLE

Rated speed rpm : 300
Rack travel in mm : 6.40
Tolerance mm : ± 0.10
Del. quantity
cm³/1000 strokes : 19.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0
Spreed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 17.07.97
Test oil : ISO 4113

Combination No. : 0 402 648 974

Injection pump
Pump designation : PE8P120A320LS7875
EP type number : 0 412 628 881

Governor
Governor design. : RQ250/1150PA1122
Governor no. : 0 421 801 704

Cust. part No. :

Customer-spec. information
Customer : DAEWOO
Motor : V2-8TC

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Test nozzle holder
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 5.20
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 16.00
Tolerance mm : ± 1.50

Firing order : 8- 7- 2- 6- 3
: - 5- 4- 1

Phasing : 0-45-90-135-180
: -225-270-315
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 8

BASIC SETTING

Rated speed rpm : 1150

Rack travel in mm : 13.60
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 208.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000s. : ± 4.0

Spread

Tolerance
cm³/1000 strokes : 7.0

Check tolerance
cm³/1000s. : 10.0

Rated speed rpm : 300

Rack travel in mm : 5.80
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 18.0

Tolerance
cm³/1000 strokes : ± 3.0

Check tolerance
cm³/1000s. : ± 6.0

Spread

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000s. : 8.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1207
guide sleeve
travel mm : 6.36
Tolerance mm : ± 0.10

Rated speed rpm : 300
guide sleeve
travel mm : 2.39
Tolerance mm : ± 0.10

Rated speed rpm : 650
guide sleeve
travel mm : 6.00
Tolerance mm : ± 0.10

Rated speed rpm : 382
guide sleeve
travel mm : 5.26

Tolerance mm : ± 0.10

Rated speed rpm : 450
guide sleeve
travel mm : 6.00
Tolerance mm : ± 0.10

Rated speed rpm : 1370
guide sleeve
travel mm : 11.50
Tolerance mm : ± 0.50

GUIDE SLEEVE POSITION

control lever
position degree : 109
Rated speed rpm : 600

Rack travel in mm : 20.00
Tolerance mm : ± 0.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1150
Aneroid pressure
hPa : -

Del. quantity
cm³/1000 strokes : 208.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000s. : ± 4.0

Spread

Tolerance
cm³/1000 strokes : 7.0

Check tolerance
cm³/1000s. : 10.0

CONTROL LEVER

control lever
position degree : 34.0
tolerance degree : ± 4.0

control lever
position degree : 95.0
tolerance degree : ± 4.0

RATED SPEED
rack travel mm : 12.60
Rated speed rpm : 1202
Tolerance 1/min : ± 8

rack travel mm : 4.00
Rated speed rpm : 1280

Tolerance 1/min : + 15
rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 1350

LOW IDLE

control lever
position degree : 75.0
tolerance degree : + 4.0

control lever
position degree : 14.0
tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 200
CRT mm min. : > 9.20

Testing:

Rated speed rpm : 300
rack travel mm : 5.80
Tolerance mm : + 0.10

rack travel mm : 2.00
Rated speed rpm : 375
Tolerance 1/min : + 20

TORQUE CONTROL

Rated speed rpm : 1150
rack travel mm : 13.60
Tolerance mm : + 0.05

Rated speed rpm : 650
rack travel mm : 13.60
Tolerance mm : + 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1500
rack travel mm : 13.60
Tolerance mm : + 0.05

Rated speed rpm : 500
Pressure hPa : -

rack travel mm : 9.00
Tolerance mm : + 0.20

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 650
rack travel mm : 12.30
Tolerance mm : + 0.20

Pressure hPa : 250
rack travel mm : 10.00
Tolerance mm : + 0.05

Start interlock

Rated speed rpm : > 205
Rated speed rpm : < 240

Check
speed 1/min : > 185

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 650
Del. quantity
cm³/1000 strokes : 226.0
Tolerance
cm³/1000 strokes : + 3.0
Check tolerance
cm³/1000S. : + 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 137.0
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 4.0

STARTING FUEL DELIVERY

Del. quantity
cm³/1000 strokes : 203.0
Tolerance
cm³/1000 strokes : + 10.0
Check tolerance
cm³/1000S. : + 14.0

LOW IDLE

Rated speed rpm : 300

Rack travel in mm : 5.80

Tolerance mm : \pm 0.10

Del. quantity

cm³/1000 strokes : 18.0

Tolerance

cm³/1000 strokes : \pm 3.0

Check tolerance

cm³/1000S. : \pm 6.0

Spread

Tolerance

cm³/1000 strokes : 5.0

Check tolerance

cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 21.07.97
Test oil : ISO 4113

Combination No. : 0 402 736 908

Injection pump
Pump designation : PES6P120A120RS7413
EP type number : 0 412 726 962

Governor
Governor design. : RQV350...1250PA1280K
Governor no. : 0 421 815 521

Cust. part No. : 3283516

Customer-spec. information
Customer : CUMMINS
Motor : 6BTAA
Power KW : 198.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 2.0
Tolerance bar : ± 0.1

Overflow quantity
min. l/h : 260
Tolerance l/h : ± 20.0

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 3.75
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 12.50
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery blocking

°NW after s.o.d. : 5.00
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1250

Rack travel in mm : 12.40
Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 137.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Speed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 360

Rack travel in mm : 6.70
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 25.0

Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 6.0

Speed

Tolerance
cm³/1000 strokes : 7.0

Check tolerance
cm³/1000S. : 11.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1314
guide sleeve
travel mm : 10.36
Tolerance mm : \pm 0.15

Rated speed rpm : 350
guide sleeve
travel mm : 1.83
Tolerance mm : \pm 0.20

Rated speed rpm : 870
guide sleeve
travel mm : 6.06
Tolerance mm : \pm 0.25

Rated speed rpm : 1540
guide sleeve
travel mm : 13.50
Tolerance mm : \pm 0.50

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1360

Rack travel in mm : 11.40
Tolerance mm : \pm 2.70

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1250
Aneroid pressure
hPa : 1500
Del. quantity
cm³/1000 strokes : 137.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0
Speed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 65.0
tolerance degree : \pm 4.0

control lever
position degree : 122.0
tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 11.40
Rated speed rpm : 1295
Tolerance 1/min : \pm 5

rack travel mm : 4.00
Rated speed rpm : 1385
Tolerance 1/min : \pm 15
Check
speed 1/min : \pm 20

rack travel mm : 0.50
Tolerance mm : \pm 0.50

Rated speed rpm : 1500

LOW IDLE

control lever
position degree : 78.0
tolerance degree : \pm 4.0

control lever
position degree : 20.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 250

CRT mm min. : $>$ 9.40

Testing:

Rated speed rpm : 360
rack travel mm : 6.70
Tolerance mm : \pm 0.10

Rated speed rpm : 350

TORQUE CONTROL

Rated speed rpm : 1250
rack travel mm : 12.40
Tolerance mm : \pm 0.05

Rated speed rpm : 1100
rack travel mm : 12.00
Tolerance mm : \pm 0.10

Rated speed rpm : 800
rack travel mm : 11.10
Tolerance mm : \pm 0.15

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 1250
Pressure hPa : 1500
rack travel mm : 12.40
Tolerance mm : \pm 0.05

Rated speed rpm : 1250
Pressure hPa : -
rack travel mm : 9.90
Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 1250

Pressure hPa : 750
rack travel mm : 11.80
Tolerance mm : \pm 0.20

Pressure hPa : 350
rack travel mm : 10.50
Tolerance mm : \pm 0.05

Start interlock

Rated speed rpm : $>$ 100
Rated speed rpm : $<$ 320

Check
speed 1/min : $>$ 80

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1500
Rated speed rpm : 1100
Del. quantity
cm³/1000 strokes : 131.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000s. : \pm 6.0
Speed
Tolerance
cm³/1000 strokes : 12.0
Check tolerance
cm³/1000s. : 16.0

Aneroid pressure
hPa : 1500
Rated speed rpm : 800
Del. quantity
cm³/1000 strokes : 120.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000s. : \pm 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 100.0
Tolerance
cm³/1000 strokes : \pm 2.0

Check tolerance
cm³/1000S. : +- 4.0

STARTING FUEL DELIVERY

Set starting CRT at K-cam.

Rated speed rpm : 100
rack travel mm : 10.60
Tolerance mm : +- 0.50
Del. quantity
cm³/1000 strokes : 105.0
Tolerance
cm³/1000 strokes : +- 20.0
Check tolerance
cm³/1000S. : +- 24.0

LOW IDLE

Rated speed rpm : 360
Rack travel in mm : 6.70
Tolerance mm : +- 0.10
Del. quantity
cm³/1000 strokes : 25.0
Tolerance
cm³/1000 strokes : +- 3.0
Check tolerance
cm³/1000S. : +- 6.0
Spreed
Tolerance
cm³/1000 strokes : 7.0
Check tolerance
cm³/1000S. : 11.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and
adjustment instructions.
See microcard(s) W400/...

Edition : 27.05.97
Test oil : ISO 4113

Combination No. : 0 402 736 909

Injection pump
Pump designation : PES6P120A120RS7413
EP type number : 0 412 726 962

Governor
Governor design. : RQV350...1250PA1281K
Governor no. : 0 421 815 522

Cust. part No. : 3283517

Customer-spec. information
Customer : CUMMINS
Motor : 6BTAA
Power KW : 173.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 2.0
Tolerance bar : ± 0.1

Overflow quantity
min. l/h : 125
Tolerance l/h : ± 20.0

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 3.75
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 12.50
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery blocking

*NW after s.o.d. : 5.00
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1250

Rack travel in mm : 13.70
Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 154.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Speed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 360

Rack travel in mm : 6.40
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 25.0

Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 6.0

Speed

Tolerance
cm³/1000 strokes : 7.0

Check tolerance
cm³/1000S. : 11.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1315
guide sleeve
travel mm : 10.39
Tolerance mm : \pm 0.15

Rated speed rpm : 350
guide sleeve
travel mm : 2.05
Tolerance mm : \pm 0.20

Rated speed rpm : 860
guide sleeve
travel mm : 6.01
Tolerance mm : \pm 0.25

Rated speed rpm : 1540
guide sleeve
travel mm : 13.50
Tolerance mm : \pm 0.50

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1350

Rack travel in mm : 13.10
Tolerance mm : \pm 2.70

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1250
Aneroid pressure
hPa : 1500

Del. quantity
cm³/1000 strokes : 154.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Speed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 66.0
tolerance degree : \pm 4.0

control lever
position degree : 120.0
tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 12.70
Rated speed rpm : 1290
Tolerance 1/min : \pm 5

rack travel mm : 4.00
Rated speed rpm : 1390
Tolerance 1/min : \pm 15
Check
speed 1/min : \pm 20

rack travel mm : 0.50
Tolerance mm : \pm 0.50

Rated speed rpm : 1500

LOW IDLE

control lever
position degree : 78.0
tolerance degree : + 4.0

control lever
position degree : 24.0
tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 250

CRT mm min. : > 8.60

Testing:

Rated speed rpm : 360
rack travel mm : 6.40
Tolerance mm : + 0.10

Rated speed rpm : 350

TORQUE CONTROL

Rated speed rpm : 1250
rack travel mm : 13.70
Tolerance mm : + 0.05

Rated speed rpm : 750
rack travel mm : 12.20
Tolerance mm : + 0.10

Rated speed rpm : 650
rack travel mm : 11.70
Tolerance mm : + 0.15

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 1250
Pressure hPa : 1500
rack travel mm : 13.70
Tolerance mm : + 0.05

Rated speed rpm : 1250
Pressure hPa : -
rack travel mm : 9.80
Tolerance mm : + 0.20

MEASUREMENT

Rated speed rpm : 1250

Pressure hPa : 1050
rack travel mm : 13.40
Tolerance mm : + 0.20

Pressure hPa : 400
rack travel mm : 10.30
Tolerance mm : + 0.05

Start interlock

Rated speed rpm : > 100
Rated speed rpm : < 300

Check
speed 1/min : > 80
Check
speed 1/min : < 320

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1500
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 144.0
Tolerance
cm³/1000 strokes : + 3.0
Check tolerance
cm³/1000S. : + 6.0
Speed
Tolerance
cm³/1000 strokes : 12.0
Check tolerance
cm³/1000S. : 16.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 97.0
Tolerance
cm³/1000 strokes : + 2.0
Check tolerance
cm³/1000S. : + 4.0

STARTING FUEL DELIVERY

Set starting CRT at K-cam.

Rated speed rpm : 100
rack travel mm : 9.90
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 75.0
Tolerance
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000S. : \pm 24.0

LOW IDLE

Rated speed rpm : 360

Rack travel in mm : 6.40
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 25.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Spreed
Tolerance
cm³/1000 strokes : 7.0
Check tolerance
cm³/1000S. : 11.0

End of test specification sheet

Note remarks

Spread

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 23.07.97
Test oil : ISO 4113

Combination No. : 0 402 746 602

Injection pump
Pump designation : PES6P120A320RS7359
: -1
EP type number : 0 412 726 949

Governor
Governor design. : RQ275/1050PA1217-1
Governor no. : 0 421 801 798

Cust. part No. : CCEP 5152A 66-229

Customer-spec. information
Customer : RENAULT V.I.
Motor : MIDRO62045 R41
Power KW : 223.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 078

Inlet press. bar : 2.5
Tolerance bar : ± 0.1

Test nozzle holde
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 089

D01

Outside diameter : 8.0
x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.70
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 20.25
Tolerance mm : ± 0.75

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

*NW after s.o.d. : -0.45
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

CRT ZERO POSITION

Rack travel in mm : 13.40
Tolerance mm : ± 0.05

BASIC SETTING

Rated speed rpm	:	600
Tolerance mm	:	± 0.05
Del. quantity cm ³ /1000 strokes	:	285.0
Tolerance cm ³ /1000 strokes	:	± 1.0
Check tolerance cm ³ /1000S.	:	± 4.0
Spreed		
Tolerance cm ³ /1000 strokes	:	5.0
Check tolerance cm ³ /1000S.	:	9.0

Rated speed rpm	:	300
Rack travel in mm	:	-7.60
Tolerance mm	:	± 0.10
Del. quantity cm ³ /1000 strokes	:	23.0
Tolerance cm ³ /1000 strokes	:	± 2.0
Check tolerance cm ³ /1000S.	:	± 5.0
Spreed		
Tolerance cm ³ /1000 strokes	:	8.0
Check tolerance cm ³ /1000S.	:	12.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm	:	1122
guide sleeve travel mm	:	6.36
Tolerance mm	:	± 0.15
Rated speed rpm	:	300
guide sleeve travel mm	:	2.18
Tolerance mm	:	± 0.20
Rated speed rpm	:	1050
guide sleeve travel mm	:	6.00

Tolerance mm	:	± 0.10
Rated speed rpm	:	401
guide sleeve travel mm	:	5.00
Tolerance mm	:	± 0.10
Rated speed rpm	:	480
guide sleeve travel mm	:	6.00
Tolerance mm	:	± 0.10
Rated speed rpm	:	1330
guide sleeve travel mm	:	11.50
Tolerance mm	:	± 0.50

GUIDE SLEEVE POSITION

control lever position degree	:	109
Rated speed rpm	:	600
Rack travel in mm	:	20.00
Tolerance mm	:	± 0.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm	:	600
Aneroid pressure hPa	:	1000
Del. quantity cm ³ /1000 strokes	:	285.0
Tolerance cm ³ /1000 strokes	:	± 1.0
Check tolerance cm ³ /1000S.	:	± 4.0
Spreed		
Tolerance cm ³ /1000 strokes	:	5.0
Check tolerance cm ³ /1000S.	:	9.0

CONTROL LEVER

control lever position degree	:	276.0
tolerance degree	:	± 4.0
RATED SPEED		
rack travel mm	:	-1.00
Rated speed rpm	:	1115
Tolerance 1/min	:	± 15
rack travel mm	:	-9.40

Rated speed rpm : 1240
Tolerance 1/min : + 5

rack travel mm : -12.90
Tolerance mm : + 0.50
Rated speed rpm : 1350

LOW IDLE

control lever
position degree : 255.0
tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 200
CRT mm min. : > -4.90

Testing:

Rated speed rpm : 300
rack travel mm : -7.60
Tolerance mm : + 0.10

rack travel mm : -11.30
Rated speed rpm : 395
Tolerance 1/min : + 20

TORQUE CONTROL

Rated speed rpm : 600
Tolerance mm : + 0.05

Rated speed rpm : 1050
Tolerance mm : + 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1000

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : -2.45
Tolerance mm : + 0.20

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 400
rack travel mm : -0.70
Tolerance mm : + 0.15

Pressure hPa : 240
rack travel mm : -1.65
Tolerance mm : + 0.05

Start interlock

Rated speed rpm : > 100
Rated speed rpm : < 195

Check
speed 1/min : > 80
Check
speed 1/min : < 215

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1000
Rated speed rpm : 1050
Del. quantity
cm³/1000 strokes : 293.0
Tolerance
cm³/1000 strokes : + 3.0
Check tolerance
cm³/1000S. : + 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 174.0
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 145.0
Tolerance
cm³/1000 strokes : + 15.0
Check tolerance
cm³/1000S. : + 19.0

LOW IDLE

Rated speed rpm : 300
Rack travel in mm : -7.60
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 23.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 5.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 21.07.97
Test oil : ISO 4113

Combination No. : 0 402 746 608

Injection pump
Pump designation : PES6P120A320RS7359
EP type number : 0 412 726 925

Governor
Governor design. : RQ275/1050PA1275
Governor no. : 0 421 801 805

Cust. part No. : CCEP 5157A 66-222

Customer-spec. information

Customer : RENAULT V.I.
Motor : MIDR062045 F/C41
Power KW : 152.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 078

Inlet press. bar : 2.5
Tolerance bar : ± 0.1

Overflow quantity
min. l/h : 220
Tolerance l/h : ± 10.0

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.70
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 20.25
Tolerance mm : ± 0.75

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

°NW after s.o.d. : -0.95
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

CRT ZERO POSITION

Rack travel in mm : 11.70
Tolerance mm : \pm 0.05

BASIC SETTING

Rated speed rpm : 1050

Del. quantity
cm³/1000 strokes : 176.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Spread

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 275

Rack travel in mm : -6.10
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 28.0

Tolerance
cm³/1000 strokes : \pm 2.0

Check tolerance
cm³/1000S. : \pm 5.0

Spread

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1122
guide sleeve
travel mm : 7.06
Tolerance mm : \pm 0.15

Rated speed rpm : 275
guide sleeve
travel mm : 2.44
Tolerance mm : \pm 0.20

Rated speed rpm : 1050
guide sleeve
travel mm : 6.70
Tolerance mm : \pm 0.10

Rated speed rpm : 648
guide sleeve
travel mm : 6.18
Tolerance mm : \pm 0.10

Rated speed rpm : 375
guide sleeve
travel mm : 5.00
Tolerance mm : \pm 0.10

Rated speed rpm : 450
guide sleeve
travel mm : 6.00
Tolerance mm : \pm 0.10

Rated speed rpm : 1300
guide sleeve
travel mm : 11.50
Tolerance mm : \pm 0.50

Rated speed rpm : 873
guide sleeve
travel mm : 6.52
Tolerance mm : \pm 0.10

GUIDE SLEEVE POSITION

control lever
position degree : 109
Rated speed rpm : 500

Rack travel in mm : 20.00
Tolerance mm : \pm 0.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1050
Aneroid pressure
hPa : 1000

Del. quantity
cm³/1000 strokes : 176.0
Tolerance

cm³/1000 strokes : \pm 1.0
Check tolerance

cm³/1000S. : \pm 4.0
Spread

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 276.0
tolerance degree : \pm 4.0

RATED SPEED
rack travel mm : -1.00
Rated speed rpm : 1115
Tolerance 1/min : \pm 5

rack travel mm : -7.70
Rated speed rpm : 1205
Tolerance 1/min : \pm 15

rack travel mm : -11.20
Tolerance mm : \pm 0.50
Rated speed rpm : 1350

LOW IDLE

control lever
position degree : 256.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 200
CRT mm min. : $<$ -4.20

Testing:

Rated speed rpm : 275
rack travel mm : -6.10
Tolerance mm : \pm 0.10

rack travel mm : -9.60
Rated speed rpm : 375
Tolerance 1/min : \pm 20

TORQUE CONTROL

Rated speed rpm : 1050

Rated speed rpm : 600
rack travel mm : 1.00
Tolerance mm : \pm 0.10

Rated speed rpm : 800
rack travel mm : 0.80
Tolerance mm : \pm 0.20

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1000
rack travel mm : 1.00
Tolerance mm : \pm 0.10

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : -0.75
Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 250
rack travel mm : 0.65
Tolerance mm : \pm 0.15

Pressure hPa : 160
rack travel mm : -0.15
Tolerance mm : \pm 0.05

Start interlock

Rated speed rpm : $>$ 100
Rated speed rpm : $<$ 195

Check
speed 1/min : $>$ 80
Check
speed 1/min : $<$ 215

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1000
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 193.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 500

Del. quantity
cm³/1000 strokes : 149.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 155.0
Tolerance
cm³/1000 strokes : ± 15.0
Check tolerance
cm³/1000S. : ± 19.0

LOW IDLE

Rated speed rpm : 275
Rack travel in mm : -6.10
Tolerance mm : ± 0.10
Del. quantity
cm³/1000 strokes : 28.0
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 5.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 17.07.97
Test oil : ISO 4113

Combination No. : 0 402 746 609C

Injection pump
Pump designation : PES6P130A720RS7411
EP type number : 0 412 736 808

Governor
Governor design. : RQ275/950PA1274
Governor no. : 0 421 801 807

Cust. part No. : 221 575

Customer-spec. information
Customer : RABA
Motor : siehe Bemerkung

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Test nozzle holder
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 5.50
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 20.50
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-50-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 600

Rack travel in mm : 13.10
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 263.0

Tolerance
cm3/1000 strokes : + 1.0

Check tolerance
cm3/1000S. : + 4.0

Spread

Tolerance
cm3/1000 strokes : 5.0

Check tolerance
cm3/1000S. : 9.0

Rated speed rpm : 275

Rack travel in mm : 4.20
Tolerance mm : + 0.10

Del. quantity
cm3/1000 strokes : 24.0

Tolerance
cm3/1000 strokes : + 3.0

Check tolerance
cm3/1000S. : + 6.0

Spread

Tolerance
cm3/1000 strokes : 8.0

Check tolerance
cm3/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1103
guide sleeve
travel mm : 6.54
Tolerance mm : + 0.15

Rated speed rpm : 275
guide sleeve
travel mm : 2.06
Tolerance mm : + 0.20

Rated speed rpm : 1050
guide sleeve
travel mm : 6.00
Tolerance mm : + 0.10

Rated speed rpm : 355
guide sleeve
travel mm : 4.25
Tolerance mm : + 0.10

Rated speed rpm : 450

guide sleeve
travel mm : 6.00
Tolerance mm : + 0.10

Rated speed rpm : 1290
guide sleeve
travel mm : 11.50
Tolerance mm : + 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 1143

Rack travel in mm : 12.10
Tolerance mm : + 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 600
Aneroid pressure
hPa : 1500

Del. quantity
cm3/1000 strokes : 263.0

Tolerance
cm3/1000 strokes : + 1.0

Check tolerance
cm3/1000S. : + 4.0

Spread

Tolerance
cm3/1000 strokes : 5.0

Check tolerance
cm3/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 34.0
tolerance degree : + 4.0

control lever
position degree : 95.0
tolerance degree : + 4.0

RATED SPEED

rack travel mm : 12.10
Rated speed rpm : 1095
Tolerance 1/min : + 5

rack travel mm : 4.00
Rated speed rpm : 1190
Tolerance 1/min : + 15

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 1300

LOW IDLE

control lever
position degree : 73.0
tolerance degree : \pm 4.0

control lever
position degree : 11.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 175

CRT mm min. : $>$ 6.80

Testing:

Rated speed rpm : 275
rack travel mm : 4.20
Tolerance mm : \pm 0.10

rack travel mm : 2.00
Rated speed rpm : 335
Tolerance 1/min : \pm 20

TORQUE CONTROL

Rated speed rpm : 600
rack travel mm : 13.10
Tolerance mm : \pm 0.05

Rated speed rpm : 1050
rack travel mm : 13.10
tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1500
rack travel mm : 13.10
Tolerance mm : \pm 0.05

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 8.20
Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 500

D11

Pressure hPa : 380
rack travel mm : 9.85
Tolerance mm : \pm 0.15

Pressure hPa : 600
rack travel mm : 12.05
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1500
Rated speed rpm : 1050
Del. quantity
cm³/1000 strokes : 252.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 147.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0

STARTING FUEL DELIVERY

ESS test: With 24 V solenoid activated,
rack must reach start position in max.
control lever setting.

Rated speed rpm : 100
rack travel mm : 20.50
Del. quantity
cm³/1000 strokes : 110.0
Tolerance
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000S. : \pm 24.0

LOW IDLE

Rated speed rpm : 275

Rack travel in mm : 4.20
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 24.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000s. : \pm 6.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000s. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 23.07.97
Test oil : ISO 4113

Combination No. : 0 402 746 650

Injection pump
Pump designation : PES6P120A32ORS7344
EP type number : 0 412 726 914

Governor
Governor design. : RQ275/1050PA999-6
Governor no. : 0 421 801 785

Cust. part No. : CCEP 5151A 66-230

Customer-spec. information
Customer : RENAULT V.I.
Motor : MIDR 062045 M41
Power KW : 250.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 071

Inlet press. bar : 2.5

Overflow quantity
min. l/h : 145
Tolerance l/h : ± 10.0

Test nozzle holde
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.50
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 11.00
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

°NW after s.o.d. : -0.15
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

Beginning of delivery differende

betw. rack trav.
mm : 21.00
and maximum rack
travel : 11.00
Difference ° CS : 2.25

CRT ZERO POSITION

Rack travel in mm : 11.60
Tolerance mm : \pm 0.05

BASIC SETTING

Rated speed rpm : 600

Del. quantity
cm³/1000 strokes : 287.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000s. : \pm 4.0

Spreed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000s. : 9.0

Rated speed rpm : 275

Rack travel in mm : -7.00
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 37.0

Tolerance
cm³/1000 strokes : \pm 2.0

Check tolerance
cm³/1000s. : \pm 5.0

Spreed

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000s. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1131
guide sleeve
travel mm : 6.38
Tolerance mm : \pm 0.10

Rated speed rpm : 275
guide sleeve
travel mm : 0.80
Tolerance mm : \pm 0.10

Rated speed rpm : 1050
guide sleeve
travel mm : 6.00
Tolerance mm : \pm 0.10

Rated speed rpm : 306
guide sleeve
travel mm : 2.99
Tolerance mm : \pm 0.10

Rated speed rpm : 550
guide sleeve
travel mm : 6.00
Tolerance mm : \pm 0.10

Rated speed rpm : 1350
guide sleeve
travel mm : 11.50
Tolerance mm : \pm 0.50

GUIDE SLEEVE POSITION

control lever
position degree : 109
Rated speed rpm : 600

Rack travel in mm : 20.00
Tolerance mm : \pm 0.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 600
Aneroid pressure
hPa : 1000
Del. quantity
cm³/1000 strokes : 287.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000s. : \pm 4.0
Spreed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000s. : 9.0

CONTROL LEVER

control lever
position degree : 274.0
tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : -1.00
Rated speed rpm : 1135
Tolerance 1/min : \pm 5

rack travel mm : -7.60
Rated speed rpm : 1240
Tolerance 1/min : \pm 15

rack travel mm : -11.10
Tolerance mm : \pm 0.50
Rated speed rpm : 1350

LOW IDLE

control lever
position degree : 251.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 200
CRT mm min. : $<$ -5.80

Testing:

Rated speed rpm : 275
rack travel mm : -7.00
Tolerance mm : \pm 0.10

rack travel mm : -9.50
Rated speed rpm : 365
Tolerance 1/min : \pm 20

TORQUE CONTROL

Rated speed rpm : 600

Rated speed rpm : 1050
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1000

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : -3.65
Tolerance mm : \pm 0.30

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 560
rack travel mm : -1.25
Tolerance mm : \pm 0.15

Pressure hPa : 320
rack travel mm : -2.75
Tolerance mm : \pm 0.05

Start interlock

Rated speed rpm : $>$ 100
Rated speed rpm : $<$ 225

Check
speed 1/min : $>$ 80
Check
speed 1/min : $<$ 245

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : 1000
Rated speed rpm : 1050
Del. quantity
cm³/1000 strokes : 280.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000s. : \pm 6.0

Aneroid pressure

hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 114.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000s. : \pm 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100

Del. quantity
cm³/1000 strokes : 150.0
Tolerance
cm³/1000 strokes : ± 15.0
Check tolerance
cm³/1000S. : ± 19.0

LOW IDLE

Rated speed rpm : 275

Rack travel in mm : -7.00
Tolerance mm : ± 0.10
Del. quantity
cm³/1000 strokes : 37.0
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 5.0
Spread
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 23.07.97
Test oil : ISO 4113

Combination No. : 0 402 746 986

Injection pump
Pump designation : PES6P120A720RS7224
: -2
EP type number : 0 412 726 893

Governor
Governor design. : RQ275/1050PA1021-3
Governor no. : 0 421 801 677

Cust. part No. :

Customer-spec. information
Customer : IVECO-UNIC
Motor : 8460.41.731

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Overflow quantity
min. l/h : 140
Tolerance l/h : ± 20.0

Test nozzle holder
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 5.15
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Check
tolerance °NW : ± 0.40

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm : 12.65
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 221.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Speed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 275

Rack travel in mm : 5.00
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 23.0

Tolerance
cm³/1000 strokes : ± 3.0

Check tolerance
cm³/1000S. : ± 6.0

Speed

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(G) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : 109
Rated speed rpm : 600

Rack travel in mm : 20.00
Tolerance mm : ± 0.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1050
Aneroid pressure
hPa : 1200
Del. quantity
cm³/1000 strokes : 221.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Speed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

RATED SPEED

rack travel mm : 11.60

Rated speed rpm : 1103

Tolerance 1/min : ± 8

rack travel mm : 4.00

Rated speed rpm : 1175

Tolerance 1/min : ± 15

rack travel mm : 0.50

Tolerance mm : ± 0.50

Rated speed rpm : 1350

LOW IDLE

control lever

position degree : 72.0

tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 100

CRT mm min. : > 6.50

Testing:

Rated speed rpm : 275

rack travel mm : 5.00

Tolerance mm : ± 0.10

rack travel mm : 2.00

Rated speed rpm : 355

Tolerance 1/min : ± 20

TORQUE CONTROL

Rated speed rpm : 1050

rack travel mm : 12.65

Tolerance mm : ± 0.05

Rated speed rpm : 600

rack travel mm : 12.70

Tolerance mm : ± 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1200
rack travel mm : 12.65
Tolerance mm : \pm 0.05

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 7.70
Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 290
rack travel mm : 8.90
Tolerance mm : \pm 0.20

Pressure hPa : 580
rack travel mm : 11.35
Tolerance mm : \pm 0.05

Start interlock

Rated speed rpm : $>$ 100
Rated speed rpm : $<$ 215

Check
speed 1/min : $>$ 80
Check
speed 1/min : $<$ 235

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 261.0
Tolerance
cm³/1000 strokes : \pm 4.0
Check tolerance
cm³/1000S. : \pm 7.0

Aneroid pressure
hPa : -
Rated speed rpm : 600

Del. quantity
cm³/1000 strokes : 130.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 135.0
Tolerance
cm³/1000 strokes : \pm 15.0
Check tolerance
cm³/1000S. : \pm 19.0

LOW IDLE

Rated speed rpm : 275

Rack travel in mm : 5.00
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 23.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 23.07.97
Test oil : ISO 4113

Combination No. : 0 402 796 820

Injection pump
Pump designation : PES6P120A720LS7410
EP type number : 0 412 726 957

Governor
Governor design. : RE30
Governor no. : 0 421 890 038

Cust. part No. : 0260744902

Customer-spec. information
Customer : MTU
Motor : 6-R-183
Power KW : 441.0

TEST BENCH REQUIREMENTS

Inlet line : 4.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Test nozzle holde
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 1000

REMARKS

Pump-specific values
in Section (B)
must be observed!

(A) INJECTION PUMP SETTINGS
No basic setting.
Setting of constant delivery
under Section C.

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.05
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 20.00
Tolerance mm : ± 1.00

Firing order : 6- 2- 4- 1- 5-
: 3

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 6

(B) POSITIONER TESTING
Warm-up time: 3 minutes at
n=600 min-1, Uact = 2.5 V

TESTING & SETTING RACK TRAVEL SENSOR POSITION

Engine speed min-1: 0

Setting point
(P, R and H pump)

Uact V : 3.100
CRT mm : 13.00
Tolerance mm : +/- 0.05
Check
tolerance mm : +/- 0.10

Check value
(P, R and H pump)

Uact V : 1.700
CRT mm : 6.15
Tolerance mm : +/- 0.25
Check
tolerance mm : +/- 0.30

Setting point
(M pump)

Uact V : 3.100
CRT mm : 12.50
Tolerance mm : +/- 0.05
Check
tolerance mm : +/- 0.10

Check value
(M pump)

Uact V : 1.700
CRT mm : 5.50
Tolerance mm : +/- 0.25
Check
tolerance mm : +/- 0.30

Stop position

Uact V : Value with
deenergised adjusting magnet
and control rod in
stop position.
CRT mm : 0.75
Tolerance mm : +/- 0.25
Check
tolerance mm : +/- 0.35

ENGINE-SPEED SENSOR
(All P and R pumps not
H and M pumps)

Test with control rod
in stop position

Engine speed min-1: 60
Amplitude V : 1.4

Tolerance V : +/- 0.6
Check
tolerance V : +/- 1.20

Engine speed min-1: 600
Difference
Amplitude to
Amplitude V : max.1.4

(C) INJECTION PUMP WITH POSITIONER

TEST POINT V1

Rated speed rpm : 1150
Uact V : 3.500
Del. quantity
cm³/1000 strokes : 362.0
Tolerance
cm³/1000 strokes : +/- 1.0
Check tolerance
cm³/1000s. : +/- 4.0
Speed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000s. : 10.0
FUEL DELIVERY CHARACTERISTICS

Rated speed rpm : 750
Uact V : 3.500
Del. quantity
cm³/1000 strokes : 423.0
Tolerance
cm³/1000 strokes : +/- 4.0
Check tolerance
cm³/1000s. : +/- 6.0

TEST POINT L1

Rated speed rpm : 350
Uact V : 1.340
Tolerance Volt : +/- 0.060
Del. quantity
cm³/1000 strokes : 25.0
Tolerance
cm³/1000 strokes : +/- 3.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000s. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 17.07.97
Test oil : ISO 4113

Combination No. : 0 402 846 081

Injection pump
Pump designation : PE6P120A320RS8044
EP type number : 0 412 826 036

Governor
Governor design. : RQV300...950PA1355K
Governor no. : 0 421 815 962

Cust. part No. : 11127026
: -P03 v.04.97

Customer-spec. information
Customer : VCE
Motor : TD122KLE
Power KW : 250.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 078

Inlet press. bar : 2.5
Tolerance bar : ± 0.1

Overflow quantity
min. l/h : 150
Tolerance l/h : ± 20.0

Test nozzle holde
assembly : 1 688 901 103

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 11.00
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 950

Rack travel in mm : 12.80

Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 260.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Speed

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 11.0

Rated speed rpm : 300

Rack travel in mm : 7.00

Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 80.0

Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 6.0

Speed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1037

guide sleeve

travel mm : 9.86

Tolerance mm : \pm 0.15

Rated speed rpm : 300

guide sleeve

travel mm : 1.61

Tolerance mm : \pm 0.20

Rated speed rpm : 773

guide sleeve

travel mm : 6.81

Tolerance mm : \pm 0.25

Rated speed rpm : 500

guide sleeve

travel mm : 4.00

Tolerance mm : \pm 0.25

Rated speed rpm : 1280

guide sleeve

travel mm : 13.50

Tolerance mm : \pm 0.50

GUIDE SLEEVE POSITION

control lever

position degree : - 1

Rated speed rpm : 1130

Rack travel in mm : 11.62

Tolerance mm : \pm 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 950

Aneroid pressure

hPa : 1500

Del. quantity

cm³/1000 strokes : 260.0

Tolerance

cm³/1000 strokes : \pm 1.0

Check tolerance

cm³/1000S. : \pm 4.0

Speed

Tolerance

cm³/1000 strokes : 8.0

Check tolerance

cm³/1000S. : 11.0

CONTROL LEVER

control lever

position degree : 64.0

tolerance degree : \pm 4.0

control lever

position degree : 118.0

tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 11.80

Rated speed rpm : 1015

Tolerance 1/min : \pm 5

rack travel mm : 4.00

Rated speed rpm : 1110

Tolerance 1/min : \pm 15

rack travel mm : 0.50

Tolerance mm : \pm 0.50
Rated speed rpm : 1210

LOW IDLE

control lever
position degree : 71.0
tolerance degree : \pm 4.0

control lever
position degree : 17.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 200

CRT mm min. : $>$ 9.00

Testing:

Rated speed rpm : 300
rack travel mm : 7.00
Tolerance mm : \pm 0.10

Rated speed rpm : 400

TORQUE CONTROL

Rated speed rpm : 950
rack travel mm : 12.80
Tolerance mm : \pm 0.05

Rated speed rpm : 800
rack travel mm : 13.40
Tolerance mm : \pm 0.10

Rated speed rpm : 850
rack travel mm : 13.10
Tolerance mm : \pm 0.10

Rated speed rpm : 500
rack travel mm : 12.20
Tolerance mm : \pm 0.20

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 800
Pressure hPa : 1500
rack travel mm : 13.40
Tolerance mm : \pm 0.10

Rated speed rpm : 800
Pressure hPa : -
rack travel mm : 10.40
Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 800

Pressure hPa : 700
rack travel mm : 2.60
Tolerance mm : \pm 0.20

Pressure hPa : 260
rack travel mm : 0.25
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 800
Del. quantity
cm³/1000 strokes : 300.0
Tolerance
cm³/1000 strokes : \pm 4.0
Check tolerance
cm³/1000s. : \pm 8.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 220.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000s. : \pm 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 10.40
Tolerance mm : \pm 0.30
Del. quantity
cm³/1000 strokes : 165.0
Tolerance
cm³/1000 strokes : \pm 15.0
Check tolerance
cm³/1000s. : \pm 19.0

LOW IDLE

Rated speed rpm : 300

Rack travel in mm : 7.00
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 80.0
Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000s. : \pm 6.0

Speed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000s. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 23.07.97
Test oil : ISO 4113

Combination No. : 0 402 946 013

Injection pump
Pump designation : PES6P120A320RS8028
EP type number : 0 412 926 021

Governor
Governor design. : RQV275...1250PA1189K
Governor no. : 0 421 815 974

Cust. part No. : CCEP 5146A 66-220

Customer-spec. information
Customer : RENAULT V.I.
Motor : MIDR 06.02.26Y41
Power KW : 184.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 078

Inlet press. bar : 2.5

Test nozzle holder
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 5.00
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 11.00
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

*NW after s.o.d. : -0.25
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

Beginning of delivery difference

betw. rack trav.
mm : 21.00
and maximum rack
travel : 11.00
Difference ° CS : 2.25

CRT ZERO POSITION

Rack travel in mm : 14.40
Tolerance mm : \pm 0.05

BASIC SETTING

Rated speed rpm : 1250

Del. quantity
cm³/1000 strokes : 276.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Spread

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 275

Rack travel in mm : -7.40
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 47.0

Tolerance
cm³/1000 strokes : \pm 2.0

Check tolerance
cm³/1000S. : \pm 6.0

Spread

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1332
guide sleeve
travel mm : 10.07
Tolerance mm : \pm 0.25

Rated speed rpm : 275
guide sleeve
travel mm : 1.10
Tolerance mm : \pm 0.25

Rated speed rpm : 912
guide sleeve
travel mm : 6.79
Tolerance mm : \pm 0.25

Rated speed rpm : 412
guide sleeve
travel mm : 2.53
Tolerance mm : \pm 0.25

Rated speed rpm : 462
guide sleeve
travel mm : 3.16
Tolerance mm : \pm 0.25

Rated speed rpm : 550
guide sleeve
travel mm : 3.97
Tolerance mm : \pm 0.25

Rated speed rpm : 1630
guide sleeve
travel mm : 13.50
Tolerance mm : \pm 0.50

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1420

Rack travel in mm : 13.50
Tolerance mm : \pm 1.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1250
Aneroid pressure
hPa : 1600
Del. quantity
cm³/1000 strokes : 276.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0
Spread
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 303.0
tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : -1.00
Rated speed rpm : 1325
Tolerance 1/min : \pm 15

rack travel mm : -10.40
Rated speed rpm : 1480
Tolerance 1/min : \pm 5

rack travel mm : -13.90
Tolerance mm : \pm 0.50
Rated speed rpm : 1600

LOW IDLE

control lever
position degree : 250.0
tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 275
rack travel mm : -7.40
Tolerance mm : \pm 0.10

Rated speed rpm : 200

CRT mm max. : $<$ -6.60

Rated speed rpm : 380

TORQUE CONTROL

Rated speed rpm : 1250

Rated speed rpm : 800
rack travel mm : -0.75
Tolerance mm : \pm 0.10

Rated speed rpm : 350
rack travel mm : -4.10
Tolerance mm : \pm 0.25

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 1250
Pressure hPa : 1600
Tolerance mm : \pm 0.10

Rated speed rpm : 1000
Pressure hPa : -
rack travel mm : -4.40
Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 1250

Pressure hPa : 240
rack travel mm : -3.60
Tolerance mm : \pm 0.20

Pressure hPa : 480
rack travel mm : -1.60
Tolerance mm : \pm 0.05

Start interlock

Rated speed rpm : $>$ 175
Rated speed rpm : $<$ 240

Check
speed 1/min : $>$ 155
Check
speed 1/min : $<$ 260

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : 1600
Rated speed rpm : 800
Del. quantity
cm³/1000 strokes : 287.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000s. : \pm 6.0

Aneroid pressure

hPa : -
Rated speed rpm : 1000
Del. quantity
cm³/1000 strokes : 181.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000s. : \pm 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 95.0
Tolerance
cm³/1000 strokes : ± 15.0
Check tolerance
cm³/1000S. : ± 19.0

LOW IDLE

Rated speed rpm : 275
Rack travel in mm : -7.40
Tolerance mm : ± 0.10
Del. quantity
cm³/1000 strokes : 47.0
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 6.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 24.03.97
Test oil : ISO 4113

Combination No. : 0 402 996 002

Injection pump
Pump designation : PE6P120A720LS8032
EP type number : 0 412 926 023

Governor
Governor design. : RE30
Governor no. : 0 421 890 025

Cust. part No. : 1364497

Customer-spec. information
Customer : SCANIA
Motor : DSC1201

TEST BENCH REQUIREMENTS

Inlet line : EHAB

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 082

Inlet press. bar : 2.5
Tolerance bar : ± 0.1

Test nozzle holder
assembly : 1 688 901 104

Opening pressure
bar : 251.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

Pump-specific values
in Section (B)
must be observed!

(A) INJECTION PUMP SETTINGS
No basic setting.
Setting of constant delivery
under Section C.

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 3.85
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery blocking

*NW after s.o.d. : 180.00
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

(B) POSITIONER TESTING

Warm-up time: 3 minutes at
n=600 min⁻¹, Uact = 2.5 V

TESTING & SETTING RACK TRAVEL SENSOR POSITION

Engine speed min⁻¹: 0

Setting point
(P, R and H pump)

Uact V : 3.100
CRT mm : 13.00
Tolerance mm : +/- 0.05
Check
tolerance mm : +/- 0.10

Check value
(P, R and H pump)

Uact V : 1.700
CRT mm : 6.15
Tolerance mm : +/- 0.25
Check
tolerance mm : +/- 0.30

Setting point
(M pump)

Uact V : 3.100
CRT mm : 12.50
Tolerance mm : +/- 0.05
Check
tolerance mm : +/- 0.10

Check value
(M pump)

Uact V : 1.700
CRT mm : 5.50
Tolerance mm : +/- 0.25
Check
tolerance mm : +/- 0.30

Stop position

Uact V : Value with
deenergised adjusting magnet
and control rod in
stop position.

CRT mm : 0.75
Tolerance mm : +/- 0.25
Check
tolerance mm : +/- 0.35

ENGINE-SPEED SENSOR
(All P and R pumps not
H and M pumps)

Test with control rod
in stop position

Engine speed min⁻¹: 60
Amplitude V : 1.4
Tolerance V : +/- 0.6
Check
tolerance V : +/- 1.20

Engine speed min⁻¹: 600
Difference
Amplitude to
Amplitude V : max.1.4

(C) INJECTION PUMP WITH POSITIONER

TEST POINT V1

Rated speed rpm : 700
Uact V : 3.400
Del. quantity
cm³/1000 strokes : 365.0
Tolerance
cm³/1000 strokes : +/- 1.0
Check tolerance
cm³/1000S. : +/- 11.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0
FUEL DELIVERY CHARACTERISTICS

Rated speed rpm : 950
Uact V : 3.400
Del. quantity
cm³/1000 strokes : 322.0
Tolerance
cm³/1000 strokes : +/- 4.0
Check tolerance
cm³/1000S. : +/- 10.0

TEST POINT L1

Rated speed rpm : 250
Uact V : 1.400
Tolerance Volt : +/- 0.060
Check tolerance
Volt : +/- 0.060
Del. quantity
cm³/1000 strokes : 16.0

Tolerance
cm³/1000 strokes : +- 3.0
Spreed
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and
adjustment instructions.
See microcard(s) W400/...

Edition : 18.07.97
Test oil : ISO 4113

Combination No. : 0 403 474 021

Injection pump
Pump designation : PES4MW100/720RS1181
EP type number : 0 413 404 107

Governor
Governor design. : RSV400...1000MW1A348
Governor no. : 0 420 085 183

Cust. part No. : 9880882

Customer-spec. information
Customer : LIEBHERR
Motor : D924T-E A2
Power KW : 120.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 049

Inlet press. bar : 1.5

Test nozzle holde
assembly : 0 681 343 009

Opening pressure
bar : 173.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 3.05
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 900

Rack travel in mm : 13.20
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 176.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Speed

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 7.5

Rated speed rpm : 550
Rack travel in mm : 4.50
Tolerance mm : ± 0.20
Del. quantity
cm³/1000 strokes : 25.0
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 4.5
Speed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 5.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.65
Tolerance mm : ± 0.35

governor spring
pre-tension
click setting x : 3.75

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 900
Aneroid pressure
hPa : 1250
Del. quantity
cm³/1000 strokes : 176.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0
Speed

Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 7.5

CONTROL LEVER

control lever
position degree : 96.0
tolerance degree : ± 4.0

RATED SPEED
rack travel mm : 12.20
Rated speed rpm : 915
Tolerance 1/min : ± 5

rack travel mm : 4.00
Rated speed rpm : 975
Tolerance 1/min : ± 10

rack travel mm : 1.00
Tolerance mm : ± 0.70
Rated speed rpm : 1100

rack travel mm : 4.00
Rated speed rpm : 980
Tolerance 1/min : ± 10

LOW IDLE

control lever
position degree : 78.0
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 550
rack travel mm : 4.10
Tolerance mm : ± 0.10

Rated speed rpm : 100

CRT mm min. : > 19.00

Testing:

Rated speed rpm : 550
rack travel mm : 4.50
Tolerance mm : ± 0.20

TORQUE CONTROL

Rated speed rpm : 900
rack travel mm : 13.20

Tolerance mm	: + 0.05
Rated speed rpm	: 500
rack travel mm	: 13.20
Tolerance mm	: + 0.10
Rated speed rpm	: 600
rack travel mm	: 13.25
Tolerance mm	: + 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm	: 550
Pressure hPa	: -
rack travel mm	: 12.20
Tolerance mm	: + 0.05

Rated speed rpm	: 550
Pressure hPa	: 1250
rack travel mm	: 13.20
Tolerance mm	: + 0.05

MEASUREMENT

Rated speed rpm	: 550
Pressure hPa	: 550
rack travel mm	: 12.45
Tolerance mm	: + 0.05
Pressure hPa	: 640
rack travel mm	: 13.05
Tolerance mm	: + 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure	
hPa	: 1250
Rated speed rpm	: 500
Del. quantity	
cm3/1000 strokes	: 178.0
Tolerance	
cm3/1000 strokes	: + 2.0
Check tolerance	
cm3/1000S.	: + 5.0
Spread	
Tolerance	
cm3/1000 strokes	: 6.0
Check tolerance	
cm3/1000S.	: 9.0

Aneroid pressure	
hPa	: 1250
Rated speed rpm	: 600
Del. quantity	
cm3/1000 strokes	: 180.0
Tolerance	
cm3/1000 strokes	: + 2.0
Check tolerance	
cm3/1000S.	: + 5.0

Aneroid pressure	
hPa	: -
Rated speed rpm	: 550
Del. quantity	
cm3/1000 strokes	: 156.0
Tolerance	
cm3/1000 strokes	: + 1.0
Check tolerance	
cm3/1000S.	: + 4.0

STARTING FUEL DELIVERY

ESS test: With 24 V solenoid activated,
rack must reach start position in max.
control lever setting.

Rated speed rpm	: 100
rack travel mm	: 20.00
Tolerance mm	: + 1.00
Del. quantity	
cm3/1000 strokes	: 135.0
Tolerance	
cm3/1000 strokes	: + 5.0
Check tolerance	
cm3/1000S.	: + 8.0

LOW IDLE

Rated speed rpm	: 550
Rack travel in mm	: 4.50
Tolerance mm	: + 0.20
Del. quantity	
cm3/1000 strokes	: 25.0
Tolerance	
cm3/1000 strokes	: + 2.0
Check tolerance	
cm3/1000S.	: + 4.5
Spread	
Tolerance	
cm3/1000 strokes	: 3.5

Check tolerance
cm3/1000S. : 5.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 18.07.97
Test oil : ISO 4113

Combination No. : 0 403 474 021F

Injection pump
Pump designation : PES4MW100/72ORS1181
EP type number : 0 413 404 107

Governor
Governor design. : RSV400...1000MW1A348
Governor no. : 0 420 085 183

Cust. part No. :

Customer-spec. information
Customer : LIEBHERR
Motor : D924 T-E A2
Power KW : 120.0

TEST BENCH REQUIREMENTS

Inlet Line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 049

Inlet press. bar : 1.5

Test nozzle holder
assembly : 0 681 343 009

Opening pressure
bar : 173.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 3.05
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 900

Rack travel in mm : 13.20
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 176.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000s. : ± 4.0

Spread

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 7.5

Rated speed rpm : 400

Rack travel in mm : 4.50

Tolerance mm : ± 0.20

Del. quantity

cm³/1000 strokes : 25.0

Tolerance

cm³/1000 strokes : ± 2.0

Check tolerance

cm³/1000S. : ± 4.5

Spread

Tolerance

cm³/1000 strokes : 3.5

Check tolerance

cm³/1000S. : 5.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.65
Tolerance mm : ± 0.35

governor spring
pre-tension
click setting x : 3.75

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 900
Aneroid pressure
hPa : 1250
Del. quantity
cm³/1000 strokes : 176.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0
Spread

Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 7.5

CONTROL LEVER

control lever
position degree : 96.0

RATED SPEED

rack travel mm : 12.20

Rated speed rpm : 915

Tolerance 1/min : ± 5

rack travel mm : 4.00

Rated speed rpm : 975

Tolerance 1/min : ± 10

rack travel mm : 1.00

Tolerance mm : ± 0.70

Rated speed rpm : 1075

rack travel mm : 4.00

Rated speed rpm : 980

Tolerance 1/min : ± 10

LOW IDLE

control lever
position degree : 78.0

Setting point w/out bumper spring

Rated speed rpm : 550
rack travel mm : 4.10
Tolerance mm : ± 0.10

Rated speed rpm : 100

CRT mm min. : > 19.00

Testing:

Rated speed rpm : 550
rack travel mm : 4.50
Tolerance mm : ± 0.20

TORQUE CONTROL

Rated speed rpm : 900
rack travel mm : 13.20
Tolerance mm : ± 0.05

Rated speed rpm : 500
rack travel mm : 13.20
Tolerance mm : \pm 0.05

Rated speed rpm : 600
rack travel mm : 13.20
Tolerance mm : \pm 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 550
Pressure hPa : -
rack travel mm : 12.20
Tolerance mm : \pm 0.05

Rated speed rpm : 550
Pressure hPa : 1250
rack travel mm : 13.20
Tolerance mm : \pm 0.05

MEASUREMENT

Rated speed rpm : 550

Pressure hPa : 550
rack travel mm : 12.45
Tolerance mm : \pm 0.05

Pressure hPa : 640
rack travel mm : 13.05
Tolerance mm : \pm 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1250
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 178.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 5.0
Speed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 9.0

Aneroid pressure
hPa : 1250

Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 180.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 5.0

Aneroid pressure
hPa : -
Rated speed rpm : 550
Del. quantity
cm³/1000 strokes : 156.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

STARTING FUEL DELIVERY

ESS test: With 24 V solenoid activated,
rack must reach start position in max.
control lever setting.

Rated speed rpm : 100
rack travel mm : 20.00
Tolerance mm : \pm 1.00
Del. quantity
cm³/1000 strokes : 135.0
Tolerance
cm³/1000 strokes : \pm 5.0
Check tolerance
cm³/1000S. : \pm 8.0

LOW IDLE

Rated speed rpm : 400
Rack travel in mm : 4.50
Tolerance mm : \pm 0.20
Del. quantity
cm³/1000 strokes : 25.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Speed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 5.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 18.07.97
Test oil : ISO 4113

Combination No. : 0 403 476 112

Injection pump
Pump designation : PES6MW100/720RS1225
: -1
EP type number : 0 413 406 220

Governor
Governor design. : RSV400...1000MW1A338
: -1
Governor no. : 0 420 085 184

Cust. part No. : 9880791

Customer-spec. information

Customer : LIEBHERR
Motor : D 926 T-E A2
Power KW : 164.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 049

Inlet press. bar : 1.5

Test nozzle holde
assembly : 0 681 343 009

Opening pressure
bar : 173.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0
x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 3.05
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.51
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 14.05
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 159.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm3/1000S. : +- 4.0

Spread

Tolerance
cm3/1000 strokes : 4.0

Check tolerance
cm3/1000S. : 7.5

Rated speed rpm : 400

Rack travel in mm : 5.80

Tolerance mm : +- 0.10

Del. quantity
cm3/1000 strokes : 17.0

Tolerance
cm3/1000 strokes : +- 2.0

Check tolerance
cm3/1000S. : +- 4.5

Spread

Tolerance
cm3/1000 strokes : 3.5

Check tolerance
cm3/1000S. : 5.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.65
Tolerance mm : +- 0.35

governor spring
pre-tension
click setting x : 2.25

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1000
Aneroid pressure
hPa : 1200
Del. quantity
cm3/1000 strokes : 159.0
Tolerance
cm3/1000 strokes : +- 1.0

Check tolerance
cm3/1000S. : +- 4.0

Spread

Tolerance
cm3/1000 strokes : 4.0

Check tolerance
cm3/1000S. : 7.5

CONTROL LEVER

control lever
position degree : 98.0
tolerance degree : +- 4.0

RATED SPEED

rack travel mm : 13.05

Rated speed rpm : 1040

Tolerance 1/min : +- 5

rack travel mm : 4.00

Rated speed rpm : 1085

Tolerance 1/min : +- 10

rack travel mm : 1.00

Tolerance mm : +- 0.70

Rated speed rpm : 1200

rack travel mm : 4.00

Rated speed rpm : 1090

Tolerance 1/min : +- 10

LOW IDLE

control lever
position degree : 70.0
tolerance degree : +- 4.0

Setting point w/out bumper spring

Rated speed rpm : 400
rack travel mm : 5.00
Tolerance mm : +- 0.10

Rated speed rpm : 100

CRT mm min. : > 19.00

Testing:

Rated speed rpm : 400
rack travel mm : 5.80
Tolerance mm : +- 0.10

TORQUE CONTROL

Rated speed rpm : 1000
rack travel mm : 14.05
Tolerance mm : \pm 0.05

Rated speed rpm : 500
rack travel mm : 14.05
Tolerance mm : \pm 0.10

Rated speed rpm : 700
rack travel mm : 14.05
Tolerance mm : \pm 0.10

**ANEROID/ALTITUDE
COMPENSATOR TEST****SETTING**

Rated speed rpm : 550
Pressure hPa : -
rack travel mm : 13.45
Tolerance mm : \pm 0.05

Rated speed rpm : 550
Pressure hPa : 1200
rack travel mm : 14.05
Tolerance mm : \pm 0.10

MEASUREMENT

Rated speed rpm : 550

Pressure hPa : 565
rack travel mm : 13.60
Tolerance mm : \pm 0.10

Pressure hPa : 650
rack travel mm : 13.95
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 155.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 5.0
Speed

Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 9.0

Aneroid pressure
hPa : 1200
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 160.5
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 5.0

Aneroid pressure
hPa : -
Rated speed rpm : 550
Del. quantity
cm³/1000 strokes : 141.5
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.25
Tolerance mm : \pm 0.75
Del. quantity
cm³/1000 strokes : 135.0
Tolerance
cm³/1000 strokes : \pm 5.0
Check tolerance
cm³/1000S. : \pm 8.0

LOW IDLE

Rated speed rpm : 400

Rack travel in mm : 5.80
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 17.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Speed
Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000s. : 5.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 18.07.97
Test oil : ISO 4113
Combination No. : 0 403 476 151
Injection pump
Pump designation : PES6MW100/720RS1131
EP type number : 0 413 406 123
Governor
Governor design. : RSV350...1200MWOA405
Governor no. : 0 420 085 294
Cust. part No. : 0270742302

Customer-spec. information
Customer : MB-NFZ
Motor : OM 366 A
Power KW : 118.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1
Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1 419 992 198
Inlet press. bar : 1.5
Test nozzle holder
assembly : 1 688 901 101
Opening pressure
bar : 208.5
Tolerance bar : ± 1.5
Test lines : 1 680 750 089
Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0
Prescroke mm : 3.75
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10
Rack travel in mm : 10.50
Tolerance mm : ± 1.50
Firing order : 1- 5- 3- 6- 2-
: 4
Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1180
Rack travel in mm : 11.65
Tolerance mm : ± 0.05
Del. quantity
cm³/1000 strokes : 89.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 3.0
Speed

Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 6.0

Rated speed rpm : 350

Rack travel in mm : 6.30

Tolerance mm : ± 0.25

Del. quantity

cm³/1000 strokes : 12.0

Tolerance

cm³/1000 strokes : ± 2.0

Check tolerance

cm³/1000S. : ± 4.5

Speed

Tolerance

cm³/1000 strokes : 3.5

Check tolerance

cm³/1000S. : 5.5

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever

position degree : - 3

Rated speed rpm : 800

Rack travel in mm : 0.65

Tolerance mm : ± 0.35

governor spring

pre-tension

click setting x : 5.25

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1180

Aneroid pressure

hPa : 800

Del. quantity

cm³/1000 strokes : 89.0

Tolerance

cm³/1000 strokes : ± 1.0

Check tolerance

cm³/1000S. : ± 3.0

Speed

Tolerance

cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 6.0

CONTROL LEVER

control lever

position degree : 107.0

tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 10.65

Rated speed rpm : 1233

Tolerance 1/min : ± 3

rack travel mm : 4.00

Rated speed rpm : 1315

Tolerance 1/min : ± 5

rack travel mm : 1.00

Tolerance mm : ± 0.70

Rated speed rpm : 1400

LOW IDLE

control lever

position degree : 81.0

tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 100

CRT mm min. : > 19.00

Testing:

Rated speed rpm : 350

rack travel mm : 6.30

Tolerance mm : ± 0.25

rack travel mm : 2.00

Rated speed rpm : 450

Tolerance 1/min : ± 30

TORQUE CONTROL

Rated speed rpm : 1180

rack travel mm : 11.65

Tolerance mm : ± 0.05

Rated speed rpm : 800

rack travel mm : 12.00

Tolerance mm : ± 0.10

Rated speed rpm : 1100
rack travel mm : 11.75
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 800
rack travel mm : 12.00
Tolerance mm : \pm 0.10

Rated speed rpm : 500
Pressure hPa : -
Tolerance mm : \pm 0.10

MEASUREMENT

Rated speed rpm : 500
Pressure hPa : 350
rack travel mm : 1.10
Tolerance mm : \pm 0.10

Pressure hPa : 275
rack travel mm : 0.65
Tolerance mm : \pm 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 800
Rated speed rpm : 800
Del. quantity
cm³/1000 strokes : 88.0
Tolerance
cm³/1000 strokes : \pm 1.5
Check tolerance
cm³/1000S. : \pm 4.0
Spreed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 7.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 50.0
Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 3.0

STARTING FUEL DELIVERY

Check hydraulic start locking and
unlocking device with 500...1000 hPa.

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 83.0
Tolerance
cm³/1000 strokes : \pm 5.0
Check tolerance
cm³/1000S. : \pm 8.0

LOW IDLE

Rated speed rpm : 350
Rack travel in mm : 6.30
Tolerance mm : \pm 0.25
Del. quantity
cm³/1000 strokes : 12.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Spreed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 5.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 28.07.97
Test oil : ISO 4113
Combination No. : 0 400 876 275
Injection pump
Pump designation : PES6A95D410RS2471
EP type number : 0 410 896 952
Governor
Governor design. : RSV325...1150A8C674
: -3L
Governor no. : 0 420 232 543
Cust. part No. :

Customer-spec. information
Customer : KHD
Motor : BF6L913C
Power KW : 132.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1
Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1 419 992 198
Inlet press. bar : 1.5
Test nozzle holder
assembly : 0 681 343 009
Opening pressure
bar : 173.5
Tolerance bar : ± 1.5
Test lines : 1 680 750 014
Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0
Prestroke mm : 1.95
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10
Rack travel in mm : 10.50
Tolerance mm : ± 1.50
Firing order : 1- 5- 3- 6- 2-
: 4
Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1150
Rack travel in mm : 11.85
Tolerance mm : ± 0.05
Del. quantity
cm³/1000 strokes : 109.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 3.0
Speed

Tolerance
cm³/1000 strokes : 3.0

Check tolerance
cm³/1000S. : 6.0

Rated speed rpm : 325

Rack travel in mm : 6.80

Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 19.0

Tolerance
cm³/1000 strokes : ± 3.0

Check tolerance
cm³/1000S. : ± 5.5

Spread
Tolerance
cm³/1000 strokes : 3.0

Check tolerance
cm³/1000S. : 5.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : ± 0.20

governor spring
pre-tension
click setting x : 4.75

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1150
Aneroid pressure
hPa : 700
Del. quantity
cm³/1000 strokes : 109.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 3.0
Spread
Tolerance
cm³/1000 strokes : 3.0

Check tolerance
cm³/1000S. : 6.0

CONTROL LEVER

control lever
position degree : 106.0
tolerance degree : ± 4.0

RATED SPEED
rack travel mm : 10.80
Rated speed rpm : 1195
Tolerance 1/min : ± 5

rack travel mm : 4.00
Rated speed rpm : 1250
Tolerance 1/min : ± 15

rack travel mm : 0.85
Tolerance mm : ± 0.55
Rated speed rpm : 1400

rack travel mm : 4.00
Rated speed rpm : 1300
Tolerance 1/min : ± 15

LOW IDLE

control lever
position degree : 71.0
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 325
rack travel mm : 7.30
Tolerance mm : ± 0.10

Rated speed rpm : 100

CRT mm min. : > 19.50

Testing:

Rated speed rpm : 325
rack travel mm : 6.80
Tolerance mm : ± 0.10

rack travel mm : 2.00
Rated speed rpm : 615
Tolerance 1/min : ± 30

TORQUE CONTROL

Rated speed rpm : 1150
rack travel mm : 11.85
Tolerance mm : \pm 0.05

Rated speed rpm : 500
rack travel mm : 11.90
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 700
rack travel mm : 11.85
Tolerance mm : \pm 0.05

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 9.90
Tolerance mm : \pm 0.10

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 160
rack travel mm : 10.55
Tolerance mm : \pm 0.15

Pressure hPa : 340
rack travel mm : 11.35
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 700
Rated speed rpm : 850
Del. quantity
cm³/1000 strokes : 105.0
Tolerance
cm³/1000 strokes : \pm 1.5
Check tolerance
cm³/1000S. : \pm 4.0
Speed
Check tolerance
cm³/1000S. : 7.0

Aneroid pressure
hPa : -
Rated speed rpm : 500

Del. quantity
cm³/1000 strokes : 63.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 3.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 15.70
Tolerance mm : \pm 0.20
Del. quantity
cm³/1000 strokes : 125.0
Tolerance
cm³/1000 strokes : \pm 5.0
Check tolerance
cm³/1000S. : \pm 8.0

LOW IDLE

Rated speed rpm : 325

Rack travel in mm : 6.80
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 19.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 5.5
Speed
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000S. : 5.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 18.07.97
Test oil : ISO 4113

Combination No. : 0 400 876 407

Injection pump
Pump designation : PES6A95D41ORS2835
EP type number : 0 410 896 896

Governor
Governor design. : RSV650...1050A8C2263
: -3L
Governor no. : 0 420 232 586

Cust. part No. : 87 800 684

Customer-spec. information

Customer : NH
Motor : 7.5 L
Power KW : 138.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 2.60
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 750

Rack travel in mm : 14.00
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 141.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm3/1000S. : + 3.0

Spread

Tolerance
cm3/1000 strokes : 3.5

Check tolerance
cm3/1000S. : 6.0

Rated speed rpm : 650

Rack travel in mm : 5.50
Tolerance mm : + 0.10

Del. quantity
cm3/1000 strokes : 22.0

Tolerance
cm3/1000 strokes : + 2.0

Check tolerance
cm3/1000S. : + 3.5

Spread
Tolerance

cm3/1000 strokes : 3.5
Check tolerance

cm3/1000S. : 5.5

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : + 0.20

governor spring
pre-tension
click setting x : 2.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 750
Aneroid pressure
hPa : 800
Del. quantity
cm3/1000 strokes : 141.0
Tolerance
cm3/1000 strokes : + 1.0

Check tolerance
cm3/1000S. : + 3.0
Spread
Tolerance
cm3/1000 strokes : 3.5
Check tolerance
cm3/1000S. : 6.0

CONTROL LEVER

control lever
position degree : 91.0
tolerance degree : + 4.0

ASSEMBLY GOVERNOR SETTING

Rated speed rpm : 1092
rack travel mm : 11.80

Rated speed rpm : 1122
Tolerance 1/min : + 5
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : + 0.55
Rated speed rpm : 1250

Rated speed rpm : 1093
rack travel mm : 11.80

Rated speed rpm : 1123
Tolerance 1/min : + 5
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : + 0.55
Rated speed rpm : 1250

Rated speed rpm : 1094
rack travel mm : 11.80

Rated speed rpm : 1124
Tolerance 1/min : + 5
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : + 0.55
Rated speed rpm : 1250

Rated speed rpm : 1095
rack travel mm : 11.80

Rated speed rpm : 1125
Tolerance 1/min : + 5

rack travel mm : 4.00
rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 1250

Rated speed rpm : 1096
rack travel mm : 11.80

Rated speed rpm : 1126
Tolerance 1/min : \pm 5
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 1250

Rated speed rpm : 1097
rack travel mm : 11.80

Rated speed rpm : 1127
Tolerance 1/min : \pm 5
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 1250

LOW IDLE

control lever
position degree : 73.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 650
rack travel mm : 5.00
Tolerance mm : \pm 0.10

Testing:

Rated speed rpm : 650
rack travel mm : 5.50
Tolerance mm : \pm 0.10

rack travel mm : 2.00
Rated speed rpm : 780
Tolerance 1/min : \pm 30

TORQUE CONTROL

Rated speed rpm : 750
rack travel mm : 14.00
Tolerance mm : \pm 0.10

Rated speed rpm : 1050
rack travel mm : 12.50
Tolerance mm : \pm 0.10

Rated speed rpm : 1050
rack travel mm : 12.80
Tolerance mm : \pm 0.10

Rated speed rpm : 960
rack travel mm : 13.60
Tolerance mm : \pm 0.15

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 800
rack travel mm : 14.00
Tolerance mm : \pm 0.10

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 9.00
Tolerance mm : \pm 0.10

MEASUREMENT

Rated speed rpm : 500
Pressure hPa : 325
rack travel mm : 11.15
Tolerance mm : \pm 0.20

Pressure hPa : 550
rack travel mm : 13.45
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 77.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.00
Tolerance mm : \pm 0.20
Del. quantity
cm³/1000 strokes : 197.0
Tolerance
cm³/1000 strokes : \pm 10.0
Check tolerance
cm³/1000S. : \pm 13.0

LOW IDLE

Rated speed rpm : 650
Rack travel in mm : 5.50
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 22.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 3.5
Spreed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 5.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 25.07.97
Test oil : ISO 4113
Combination No. : 0 402 076 753
Injection pump
Pump designation : PES6P120A72ORS3203
EP type number : 0 412 026 728
Governor
Governor design. : RSV400...1100P2A534
: -13
Governor no. : 0 421 833 403
Cust. part No. : RE50748

Customer-spec. information
Customer : DEERE
Motor : 6076 AF & HF
Power KW : 186.0

TEST BENCH REQUIREMENTS

Inlet line : 2.
Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1 457 413 010
Inlet press. bar : 1.5
Test nozzle holde
assembly : 1 688 901 101
Opening pressure
bar : 208.5
Tolerance bar : ± 1.5
Test lines : 1 680 750 015
Outside diameter : 6.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : ± 1.0

Prestroke mm : 3.60
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

*NW after s.o.d. : 10.50
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 12.25
Tolerance mm : ± 0.05

Del. quantity
cm3/1000 strokes : 156.0

Tolerance
cm3/1000 strokes : ± 1.0

Check tolerance
cm3/1000S. : ± 3.0

Speed

Tolerance
cm3/1000 strokes : 4.0

Check tolerance
cm3/1000S. : 6.5

Rack travel in mm : 5.40
Tolerance mm : ± 0.10

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : ± 0.20

governor spring
pre-tension
click setting x : 4.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100
Aneroid pressure
hPa : 1200
Del. quantity
cm3/1000 strokes : 156.0
Tolerance
cm3/1000 strokes : ± 1.0
Check tolerance
cm3/1000S. : ± 3.0
Speed
Tolerance
cm3/1000 strokes : 4.0
Check tolerance
cm3/1000S. : 6.5

CONTROL LEVER

control lever
position degree : 99.0
tolerance degree : ± 4.0

RATED SPEED
rack travel mm : 11.20
Rated speed rpm : 1155
Tolerance 1/min : ± 5

rack travel mm : 4.00
Rated speed rpm : 1230
Tolerance 1/min : ± 5

rack travel mm : 0.85
Tolerance mm : ± 0.55
Rated speed rpm : 1400

rack travel mm : 4.00
Rated speed rpm : 1235
Tolerance 1/min : ± 15

LOW IDLE

control lever
position degree : 76.0
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 400
rack travel mm : 5.90
Tolerance mm : ± 0.10

Rated speed rpm : 100

CRT mm min. : > 19.00

Testing:

Rated speed rpm : 400
rack travel mm : 5.40
Tolerance mm : ± 0.10

TORQUE CONTROL

Rated speed rpm : 1100
rack travel mm : 12.25
Tolerance mm : ± 0.05

Rated speed rpm : 650
rack travel mm : 13.50

Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1200
rack travel mm : 13.50
Tolerance mm : \pm 0.10

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 11.00
Tolerance mm : \pm 0.10

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 850
rack travel mm : 12.75
Tolerance mm : \pm 0.05

Pressure hPa : 590
rack travel mm : 11.30
Tolerance mm : \pm 0.20

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 650
Del. quantity
cm³/1000 strokes : 189.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0

Aneroid pressure
hPa : -
Rated speed rpm : 800
Del. quantity
cm³/1000 strokes : 120.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0

STARTING FUEL DELIVERY

F01

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 100.0
Tolerance
cm³/1000 strokes : \pm 10.0
Check tolerance
cm³/1000S. : \pm 15.0

LOW IDLE

Rack travel in mm : 5.40
Tolerance mm : \pm 0.10

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 09.06.97
Test oil : ISO 4113
Combination No. : 0 402 076 755
Injection pump
Pump designation : PES6P110A320LS3318
EP type number : 0 412 016 741
Governor
Governor design. : RSV350...750P4A561
Governor no. : 0 421 833 406

Cust. part No. : 1820271C92

Customer-spec. information
Customer : NAVISTAR
Motor : DTA-466
Power KW : 185.0

TEST BENCH REQUIREMENTS

Inlet line : 2.4
Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1 417 413 076
Inlet press. bar : 2.8
Tolerance bar : ± 0.1
Test nozzle holder
assembly : 1 688 901 101
Opening pressure
bar : 208.5
Tolerance bar : ± 1.5
Test lines : 1 680 750 015
Outside diameter : 6.0

F02

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : ± 1.0
Prestroke mm : 3.00
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10
Rack travel in mm : 10.50
Tolerance mm : ± 1.50
Firing order : 1- 5- 3- 6- 2-
: 4
Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75
Start of delivery blocking
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75
Barrel no. : 1

BASIC SETTING

Rated speed rpm : 700
Rack travel in mm : 12.85
Tolerance mm : ± 0.05
Del. quantity
cm³/1000 strokes : 219.0

Tolerance	
cm3/1000 strokes	: +- 1.0
Check tolerance	
cm3/1000S.	: +- 3.0
Spreed	
Tolerance	
cm3/1000 strokes	: 4.0
Check tolerance	
cm3/1000S.	: 6.5

Rated speed rpm	: 350
Rack travel in mm	: 5.70
Tolerance mm	: +- 0.10
Del. quantity	
cm3/1000 strokes	: 40.0
Tolerance	
cm3/1000 strokes	: +- 2.0
Check tolerance	
cm3/1000S.	: +- 4.5
Spreed	
Tolerance	
cm3/1000 strokes	: 8.0
Check tolerance	
cm3/1000S.	: 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever	
position degree	: - 3
Rated speed rpm	: 800
Rack travel in mm	: 0.50
Tolerance mm	: +- 0.20
governor spring	
pre-tension	
click setting x	: 2.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm	: 700
Aneroid pressure	
hPa	: -
Del. quantity	
cm3/1000 strokes	: 219.0

F03

Tolerance	
cm3/1000 strokes	: +- 1.0
Check tolerance	
cm3/1000S.	: +- 3.0
Spreed	
Tolerance	
cm3/1000 strokes	: 4.0
Check tolerance	
cm3/1000S.	: 6.5

CONTROL LEVER

control lever	
position degree	: 94.0
tolerance degree	: +- 4.0

RATED SPEED

rack travel mm	: 11.50
Rated speed rpm	: 755
Tolerance 1/min	: +- 5
rack travel mm	: 4.00
Rated speed rpm	: 795
Tolerance 1/min	: +- 5

rack travel mm	: 0.85
Tolerance mm	: +- 0.55
Rated speed rpm	: 900

rack travel mm	: 4.00
Rated speed rpm	: 800
Tolerance 1/min	: +- 5

LOW IDLE

control lever	
position degree	: 74.0
tolerance degree	: +- 4.0

Setting point w/out bumper spring

Rated speed rpm	: 100
CRT mm min.	: > 19.00

Testing:

Rated speed rpm	: 350
rack travel mm	: 5.70
Tolerance mm	: +- 0.10

TORQUE CONTROL

Rated speed rpm	: 700
-----------------	-------

rack travel mm : 12.85
Tolerance mm : \pm 0.05

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 155.0
Tolerance
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000S. : \pm 25.0

LOW IDLE

Rated speed rpm : 350

Rack travel in mm : 5.70
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 40.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 25.07.97
Test oil : ISO 4113
Combination No. : 0 402 076 756
Injection pump
Pump designation : PES6P100A320LS3317
EP type number : 0 412 006 706
Governor
Governor design. : RSV400...1200P5A587
Governor no. : 0 421 833 446

Cust. part No. : 1820269C91

Customer-spec. information
Customer : NAVISTAR
Motor : DTA-466
Power KW : 204.0

TEST BENCH REQUIREMENTS

Inlet line : 2.4
Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1 417 413 076
Inlet press. bar : 2.8
Tolerance bar : ± 0.1
Test nozzle holde
assembly : 1 688 901 101
Opening pressure
bar : 208.5
Tolerance bar : ± 1.5
Test lines : 1 680 750 015
Outside diameter : 6.0

F05

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : ± 1.0

Prestroke mm : 3.00
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1200

Rack travel in mm : 14.65
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 176.5

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 3.0

Spread

Tolerance
cm3/1000 strokes : 8.0

Check tolerance
cm3/1000S. : 12.0

Rack travel in mm : 5.20
Tolerance mm : + 0.10

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : + 0.20

governor spring
pre-tension
click setting x : 3.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1200
Aneroid pressure
hPa : 1500
Del. quantity
cm3/1000 strokes : 176.5
Tolerance
cm3/1000 strokes : + 1.0
Check tolerance
cm3/1000S. : + 3.0
Spreed
Tolerance
cm3/1000 strokes : 8.0
Check tolerance
cm3/1000S. : 12.0

CONTROL LEVER

control lever
position degree : 105.0
tolerance degree : + 4.0

RATED SPEED
rack travel mm : 13.60

Rated speed rpm : 1245
Tolerance 1/min : + 5

rack travel mm : 4.00
Rated speed rpm : 1315
Tolerance 1/min : + 5

rack travel mm : 0.85
Tolerance mm : + 0.55
Rated speed rpm : 1400

rack travel mm : 4.00
Rated speed rpm : 1320
Tolerance 1/min : + 5

LOW IDLE

control lever
position degree : 75.0
tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 100

CRT mm min. : > 19.00

Testing:

Rated speed rpm : 400
rack travel mm : 5.20
Tolerance mm : + 0.10

TORQUE CONTROL

Rated speed rpm : 1200
rack travel mm : 14.65
Tolerance mm : + 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 1200
Pressure hPa : 1500
rack travel mm : 14.65
Tolerance mm : + 0.05

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 8.40
Tolerance mm : + 0.20

MEASUREMENT

Rated speed rpm : 1200
Pressure hPa : 650
rack travel mm : 13.20
Tolerance mm : \pm 0.20

Pressure hPa : 240
rack travel mm : 9.55
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 72.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 145.0
Tolerance
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000S. : \pm 25.0

LOW IDLE

Rack travel in mm : 5.20
Tolerance mm : \pm 0.10

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 25.07.97
Test oil : ISO 4113

Combination No. : 0 402 076 764

Injection pump
Pump designation : PES6P110A72ORS3083
: -1
EP type number : 9 410 231 027

Governor
Governor design. : RSV425...1100P2A582
Governor no. : 0 421 833 439

Cust. part No. : RE23748

Customer-spec. information
Customer : DEERE
Motor : 6466 A
Power KW : 161.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 457 413 010

Inlet press. bar : 1.5

Test nozzle holde
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter : 3.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : ± 1.0

Prestroke mm : 3.50
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

*NW after s.o.d. : 13.00
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 12.05
Tolerance mm : ± 0.05

Del. quantity
cm³/100C strokes : 131.5

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 3.0

Spreed

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 6.5

Rack travel in mm : 6.00
Tolerance mm : + 0.10

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : + 0.20

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100
Aneroid pressure
hPa : 1200
Del. quantity
cm³/1000 strokes : 131.5
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 3.0
Spreed
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 6.5

CONTROL LEVER

control lever
position degree : 100.0

F09

tolerance degree : + 4.0

RATED SPEED

rack travel mm : 11.00
Rated speed rpm : 1160
Tolerance 1/min : + 5

rack travel mm : 4.00
Rated speed rpm : 1240
Tolerance 1/min : + 5

rack travel mm : 0.85
Tolerance mm : + 0.55
Rated speed rpm : 1350

rack travel mm : 4.00
Rated speed rpm : 1245
Tolerance 1/min : + 15

LOW IDLE

control lever
position degree : 75.0
tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 425
rack travel mm : 6.50
Tolerance mm : + 0.10

Rated speed rpm : 100

CRT mm min. : > 19.00

Testing:

Rated speed rpm : 425
rack travel mm : 6.00
Tolerance mm : + 0.10

TORQUE CONTROL

Rated speed rpm : 1100
rack travel mm : 12.05
Tolerance mm : + 0.05

Rated speed rpm : 700
rack travel mm : 13.20
Tolerance mm : + 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1200
rack travel mm : 13.20
Tolerance mm : ± 0.10

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 11.20
Tolerance mm : ± 0.10

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 200
rack travel mm : 11.60
Tolerance mm : ± 0.20

Pressure hPa : 375
rack travel mm : 12.55
Tolerance mm : ± 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 154.0
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 4.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 107.0
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 5.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : ± 0.50
Del. quantity
cm³/1000 strokes : 160.0

Tolerance

cm³/1000 strokes : ± 10.0
Check tolerance
cm³/1000S. : ± 15.0

LOW IDLE

Rack travel in mm : 6.00
Tolerance mm : ± 0.10

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 25.07.97
Test oil : ISO 4113

Combination No. : 0 402 076 770

Injection pump
Pump designation : PES6P110A320LS3318
: -1
EP type number : 0 412 016 749

Governor
Governor design. : RSV350...750P4A561
: -1
Governor no. : 0 421 833 451

Cust. part No. : 1823837C92

Customer-spec. information
Customer : NAVISTAR
Motor : DT-531
Power KW : 224.0

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 076

Inlet press. bar : 2.8
Tolerance bar : ± 0.1

Test nozzle holde
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0
x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : ± 1.0

Prestroke mm : 3.00
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 650

Rack travel in mm : 12.55
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 225.5

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 3.0

Spreed

Tolerance
cm3/1000 strokes : 4.0

Check tolerance
cm3/1000S. : 6.5

Rated speed rpm : 340

Rack travel in mm : 5.20
Tolerance mm : \pm 0.10

Del. quantity
cm3/1000 strokes : 35.0
Tolerance
cm3/1000 strokes : \pm 2.0
Check tolerance
cm3/1000S. : \pm 4.5

Spreed
Tolerance
cm3/1000 strokes : 8.0
Check tolerance
cm3/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : \pm 0.20

governor spring
pre-tension
click setting x : 4.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 650
Aneroid pressure
hPa : -
Del. quantity
cm3/1000 strokes : 225.5
Tolerance
cm3/1000 strokes : \pm 1.0
Check tolerance
cm3/1000S. : \pm 3.0
Spreed

Tolerance
cm3/1000 strokes : 4.0
Check tolerance
cm3/1000S. : 6.5

CONTROL LEVER

control lever
position degree : 97.0
tolerance degree : \pm 4.0

RATED SPEED
rack travel mm : 10.20
Rated speed rpm : 750
Tolerance 1/min : \pm 5

rack travel mm : 4.00
Rated speed rpm : 800
Tolerance 1/min : \pm 5

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 900

rack travel mm : 4.00
Rated speed rpm : 805
Tolerance 1/min : \pm 5

LOW IDLE

control lever
position degree : 76.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 100
CRT mm min. : > 19.00

Testing:

Rated speed rpm : 340
rack travel mm : 5.20
Tolerance mm : \pm 0.10

TORQUE CONTROL

Rated speed rpm : 650
rack travel mm : 12.55
Tolerance mm : \pm 0.05

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 145.0
Tolerance
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000S. : \pm 25.0

LOW IDLE

Rated speed rpm : 340

Rack travel in mm : 5.20
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 35.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 17.07.97
Test oil : ISO 4113

Combination No. : 0 402 196 706

Injection pump
Pump designation : PES6P120A72ORS3354
EP type number : 0 412 026 781

Governor
Governor design. : RE30
Governor no. : 0 421 890 029

Cust. part No. : RE 62643

Customer-spec. information
Customer : DEERE
Motor : 6081AF001
Power KW : 187.0

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 077

Inlet press. bar : 2.0
Tolerance bar : ± 0.1

Test nozzle holde
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter : 3.0
x length mm : 600

REMARKS

Pump-specific values
in Section (B)
must be observed!

(A) INJECTION PUMP SETTINGS
No basic setting.
Setting of constant delivery
under Section C.

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : ± 1.0

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

Start of delivery blocking

*NW after s.o.d. : 8.00
Tolerance : ± 0.50
Check
tolerance *NW : ± 0.75

Barrel no. : 1

Beginning of delivery differende

and maximum rack
travel : 15.00
Tolerance mm : ± 0.50
Difference * CS : 2.50

(B) POSITIONER TESTING
Warm-up time: 3 minutes at
n=600 min⁻¹, Uact = 2.5 V

TESTING & SETTING RACK TRAVEL SENSOR POSITION

Engine speed min-1: 0

Setting point
(P, R and H pump)

Uact V : 3.100
CRT mm : 13.00
Tolerance mm : +/- 0.05
Check
tolerance mm : +/- 0.10

Check value
(P, R and H pump)

Uact V : 1.700
CRT mm : 6.15
Tolerance mm : +/- 0.25
Check
tolerance mm : +/- 0.30

Setting point
(M pump)

Uact V : 3.100
CRT mm : 12.50
Tolerance mm : +/- 0.05
Check
tolerance mm : +/- 0.10

Check value
(M pump)

Uact V : 1.700
CRT mm : 5.50
Tolerance mm : +/- 0.25
Check
tolerance mm : +/- 0.30

Stop position

Uact V : Value with
deenergised adjusting magnet
and control rod in
stop position.

CRT mm : 0.75
Tolerance mm : +/- 0.25
Check
tolerance mm : +/- 0.35

ENGINE-SPEED SENSOR
(All P and R pumps not
H and M pumps)

Test with control rod
in stop position

Engine speed min-1: 60
Amplitude V : 1.4
Tolerance V : +/- 0.6
Check
tolerance V : +/- 1.20

Engine speed min-1: 600
Difference
Amplitude to
Amplitude V : max. 1.4

(C) INJECTION PUMP WITH POSITIONER

TEST POINT V1

Rated speed rpm : 1100
Uact V : 2.880
Del. quantity
cm3/1000 strokes : 140.0
Tolerance
cm3/1000 strokes : +/- 1.0
Check tolerance
cm3/1000S. : +/- 4.0
Speed
Tolerance
cm3/1000 strokes : 5.0
Check tolerance
cm3/1000S. : 9.0
FUEL DELIVERY CHARACTERISTICS

Rated speed rpm : 700
Uact V : 2.880
Del. quantity
cm3/1000 strokes : 141.5
Tolerance
cm3/1000 strokes : +/- 3.0
Check tolerance
cm3/1000S. : +/- 6.0
Speed
Tolerance
cm3/1000 strokes : 8.0
Check tolerance
cm3/1000S. : 12.0

Rated speed rpm : 425
Uact V : 1.610
Del. quantity
cm3/1000 strokes : 22.0
Tolerance
cm3/1000 strokes : +/- 3.0
Check tolerance
cm3/1000S. : +/- 6.0
Speed

Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000s. : 10.0

TEST POINT L1

Rated speed rpm : 425
Uact V : 1.610
Tolerance Volt : ± 0.060
Check tolerance
Volt : ± 0.060

STARTING FUEL DELIVERY

Rated speed rpm : 100
Uact V : 4.600
Del. quantity
cm³/1000 strokes : 105.0
Tolerance
cm³/1000 strokes : ± 10.0
Check tolerance
cm³/1000s. : ± 13.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 17.07.97
Test oil : ISO 4113
Combination No. : 0 402 196 707
Injection pump
Pump designation : PES6P120A720RS3354
EP type number : 0 412 026 781

Governor
Governor design. : RE30
Governor no. : 0 421 890 029

Cust. part No. : RE 62645

Customer-spec. information
Customer : DEERE
Motor : 6031HF001
Power KW : 203.0

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 077

Inlet press. bar : 2.0
Tolerance bar : ± 0.1

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

F17

x inside diameter : 3.0
x length mm : 600

REMARKS

Pump-specific values
in Section (B)
must be observed!

(A) INJECTION PUMP SETTINGS
No basic setting.
Setting of constant delivery
under Section C.

BEGINNING OF DELIVERY

Test pressure bar : 17.0

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

Start of delivery mark

*NW after s.o.d. : 9.00
Tolerance : ± 0.50
Check
tolerance *NW : ± 0.75

Barrel no. : 1

Beginning of delivery difference

and maximum rack
travel : 15.00
Tolerance mm : ± 0.50
Difference * CS : 2.50

(B) POSITIONER TESTING

Warm-up time: 3 minutes at
n=600 min⁻¹, U_{act} = 2.5 V

TESTING & SETTING RACK TRAVEL SENSOR POSITION

Engine speed min-1: 0

Setting point
(P, R and H pump)

Uact V : 3.100
CRT mm : 13.00
Tolerance mm : +/- 0.05
Check
tolerance mm : +/- 0.10

Check value
(P, R and H pump)

Uact V : 1.700
CRT mm : 6.15
Tolerance mm : +/- 0.25
Check
tolerance mm : +/- 0.30

Setting point
(M pump)

Uact V : 3.100
CRT mm : 12.50
Tolerance mm : +/- 0.05
Check
tolerance mm : +/- 0.10

Check value
(M pump)

Uact V : 1.700
CRT mm : 5.50
Tolerance mm : +/- 0.25
Check
tolerance mm : +/- 0.30

Stop position

Uact V : Value with
deenergised adjusting magnet
and control rod in
stop position.

CRT mm : 0.75
Tolerance mm : +/- 0.25
Check
tolerance mm : +/- 0.35

ENGINE-SPEED SENSOR
(All P and R pumps not
H and M pumps)

Test with control rod
in stop position

Engine speed min-1: 60
Amplitude V : 1.4
Tolerance V : +/- 0.6
Check
tolerance V : +/- 1.20

Engine speed min-1: 600
Difference
Amplitude to
Amplitude V : max.1.4

(C) INJECTION PUMP WITH POSITIONER

TEST POINT V1

Rated speed rpm : 1100
Uact V : 2.880
Del. quantity
cm³/1000 strokes : 140.0
Tolerance
cm³/1000 strokes : +/- 1.0
Check tolerance
cm³/1000S. : +/- 3.0
Speed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0
FUEL DELIVERY CHARACTERISTICS

Rated speed rpm : 700
Uact V : 2.880
Del. quantity
cm³/1000 strokes : 141.5
Tolerance
cm³/1000 strokes : +/- 3.0
Check tolerance
cm³/1000S. : +/- 6.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Rated speed rpm : 425
Uact V : 1.610
Del. quantity
cm³/1000 strokes : 22.0
Tolerance
cm³/1000 strokes : +/- 3.0
Check tolerance
cm³/1000S. : +/- 6.0
Speed
Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 10.0

TEST POINT L1

Rated speed rpm : 425
Uact V : 1.610
Tolerance Volt : ± 0.060
Check tolerance
Volt : ± 0.060

STARTING FUEL DELIVERY

Rated speed rpm : 100
Uact V : 4.600
Del. quantity
cm³/1000 strokes : 105.0
Tolerance
cm³/1000 strokes : ± 10.0
Check tolerance
cm³/1000S. : ± 13.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 17.07.97
Test oil : ISO 4113

Combination No. : 0 402 196 708

Injection pump
Pump designation : PES6P120A720RS3362
EP type number : 0 412 026 787

Governor
Governor design. : RE30
Governor no. : 0 421 890 029

Cust. part No. : RE 64360

Customer-spec. information
Customer : DEERE
Motor : 6073ADW31
Power KW : 140.0

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 077

Inlet press. bar : 2.0
Tolerance bar : ± 0.1

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

F20

x inside diameter : 3.0
x length mm : 600

REMARKS

Pump-specific values
in Section (B)
must be observed!

(A) INJECTION PUMP SETTINGS
No basic setting.
Setting of constant delivery
under Section C.

BEGINNING OF DELIVERY

Test pressure bar : 17.0

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

Start of delivery mark

*NW after s.o.d. : 7.75
Tolerance : ± 0.50
Check
tolerance *NW : ± 0.75

Barrel no. : 1

Beginning of delivery difference

and maximum rack
travel : 15.00
Tolerance mm : ± 0.50
Difference ° CS : 3.25

(B) POSITIONER TESTING
Warm-up time: 3 minutes at
n=600 min⁻¹, Uact = 2.5 V

TESTING & SETTING RACK TRAVEL SENSOR
POSITION

Engine speed min-1: 0

Setting point
(P, R and H pump)

Uact V : 3.100
CRT mm : 13.00
Tolerance mm : +/- 0.05
Check
tolerance mm : +/- 0.10

Check value
(P, R and H pump)

Uact V : 1.700
CRT mm : 6.15
Tolerance mm : +/- 0.25
Check
tolerance mm : +/- 0.30

Setting point
(M pump)

Uact V : 3.100
CRT mm : 12.50
Tolerance mm : +/- 0.05
Check
tolerance mm : +/- 0.10

Check value
(M pump)

Uact V : 1.700
CRT mm : 5.50
Tolerance mm : +/- 0.25
Check
tolerance mm : +/- 0.30

Stop position

Uact V : Value with
deenergised adjusting magnet
and control rod in
stop position.

CRT mm : 0.75
Tolerance mm : +/- 0.25
Check
tolerance mm : +/- 0.35

ENGINE-SPEED SENSOR
(All P and R pumps not
H and M pumps)

Test with control rod
in stop position

Engine speed min-1: 60
Amplitude V : 1.4
Tolerance V : +/- 0.6
Check
tolerance V : +/- 1.20

Engine speed min-1: 600
Difference
Amplitude to
Amplitude V : max.1.4

(C) INJECTION PUMP WITH POSITIONER

TEST POINT V1

Rated speed rpm : 1100
Uact V : 2.800
Del. quantity
cm3/1000 strokes : 139.0
Tolerance
cm3/1000 strokes : +/- 1.0
Check tolerance
cm3/1000S. : +/- 4.0
Speed
Tolerance
cm3/1000 strokes : 5.0
Check tolerance
cm3/1000S. : 9.0
FUEL DELIVERY CHARACTERISTICS

Rated speed rpm : 700
Uact V : 2.800
Del. quantity
cm3/1000 strokes : 141.0
Tolerance
cm3/1000 strokes : +/- 3.0
Check tolerance
cm3/1000S. : +/- 6.0
Speed
Tolerance
cm3/1000 strokes : 8.0
Check tolerance
cm3/1000S. : 12.0

Rated speed rpm : 425
Uact V : 1.580
Del. quantity
cm3/1000 strokes : 22.5
Tolerance
cm3/1000 strokes : +/- 3.0
Check tolerance
cm3/1000S. : +/- 6.0
Speed
Tolerance
cm3/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 10.0

TEST POINT L1

Rated speed rpm : 425
Uact V : 1.580
Tolerance Volt : ± 0.060
Check tolerance
Volt : ± 0.060

STARTING FUEL DELIVERY

Rated speed rpm : 100
Uact V : 4.600
Del. quantity
cm³/1000 strokes : 105.0
Tolerance
cm³/1000 strokes : ± 10.0
Check tolerance
cm³/1000S. : ± 13.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 25.07.97
Test oil : ISO 4113

Combination No. : 0 402 776 815

Injection pump
Pump designation : PES6P120A720RS7255
EP type number : 0 412 726 881

Governor
Governor design. : RSV400...900P7A569
Governor no. : 0 421 833 418

Cust. part No. : RE42226

Customer-spec. information
Customer : DEERE
Motor : 6101 AF010
Power KW : 285.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 079

Inlet press. bar : 1.5

Overflow quantity
min. l/h : 145
Tolerance l/h : ± 5.0

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0
x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : ± 1.0

Prestroke mm : 3.60
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

*NW after s.o.d. : 8.50
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 850

Rack travel in mm : 14.75
Tolerance mm : ± 0.05

Rack travel in mm : 5.00
Tolerance mm : \pm 0.10

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : \pm 0.20

governor spring
pre-tension
click setting x : 5.00

CONTROL LEVER

control lever
position degree : 106.0
tolerance degree : \pm 4.0

RATED SPEED
rack travel mm : 14.10
Rated speed rpm : 900
Tolerance 1/min : \pm 5

rack travel mm : 4.00
Rated speed rpm : 940
Tolerance 1/min : \pm 5

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 1050

rack travel mm : 4.00
Rated speed rpm : 980
Tolerance 1/min : \pm 15

LOW IDLE

control lever
position degree : 80.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 400
rack travel mm : 5.50
Tolerance mm : \pm 0.10

Rated speed rpm : 100

CRT mm min. : $>$ 19.00

Testing:

Rated speed rpm : 400
rack travel mm : 5.00
Tolerance mm : \pm 0.10

TORQUE CONTROL

Rated speed rpm : 850
rack travel mm : 14.75
Tolerance mm : \pm 0.05

Start interlock

Rated speed rpm : $>$ 100

Check
speed 1/min : $>$ 80

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 105.0
Tolerance
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000S. : \pm 25.0

LOW IDLE

Rack travel in mm : 5.00
Tolerance mm : \pm 0.10

End of test specification sheet

Note remarks

Edition : 25.07.97
Test oil : ISO 4113

Injection pump
Pump designation : PES6P120A72ORS7255
EP type number : 0 412 726 881

Cust. part No. : RE46178

Customer : DEERE
Motor : 6101 HFO10
Power KW : 280.0

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Inlet press. bar : 1.5

Test nozzle holde
assembly : 1 688 901 101

Test Lines : 1 680 750 015

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values

Test pressure bar : 17.0
Tolerance bar : \pm 1.0

Prestroke min	:	3.60
Tolerance mm	:	+ 0.05
Check		
tolerance mm	:	+ 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

```

Phasing      : 0-60-120-180-240
              : -300
Tolerance    : + 0.50
Check
tolerance *NW : + 0.75

```

Start of delivery mark

```

*NW after s.o.d. :      8.75
Tolerance         : +-  0.50
Check
tolerance *NW     : +-  0.75

```

Barrel no. : 1

Rated speed rpm : 1050

Rack travel in mm : 13.65
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 259.5

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Spread

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rack travel in mm : 5.30
Tolerance mm : ± 0.10

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : ± 0.20

governor spring
pre-tension
click setting x : 3.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1050
Aneroid pressure
hPa : 1700
Del. quantity
cm³/1000 strokes : 259.5
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0
Spread
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 97.0
tolerance degree : ± 4.0

RATED SPEED
rack travel mm : 12.60
Rated speed rpm : 1100
Tolerance 1/min : ± 5

rack travel mm : 4.00
Rated speed rpm : 1160
Tolerance 1/min : ± 5

rack travel mm : 0.85
Tolerance mm : ± 0.55
Rated speed rpm : 1250

rack travel mm : 4.00
Rated speed rpm : 1170
Tolerance 1/min : ± 15

LOW IDLE

control lever
position degree : 72.0
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 400
rack travel mm : 5.80
Tolerance mm : ± 0.10

Rated speed rpm : 100

CRT mm min. : > 19.00

Testing:

Rated speed rpm : 400
rack travel mm : 5.30
Tolerance mm : ± 0.10

TORQUE CONTROL

Rated speed rpm : 1050
rack travel mm : 13.65
Tolerance mm : ± 0.05

Rated speed rpm : 850
rack travel mm : 14.00
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1700
rack travel mm : 14.00
Tolerance mm : \pm 0.10

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 11.80
Tolerance mm : \pm 0.10

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 1345
rack travel mm : 13.05
Tolerance mm : \pm 0.05

Pressure hPa : 1090
rack travel mm : 12.00
Tolerance mm : \pm 0.20

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1700
Rated speed rpm : 850
Del. quantity
cm³/1000 strokes : 276.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 196.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 105.0
Tolerance
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000S. : \pm 25.0

LOW IDLE

Rack travel in mm : 5.30
Tolerance mm : \pm 0.10

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 25.07.97
Test oil : ISO 4113

Combination No. : 0 402 796 813

Injection pump
Pump designation : PES6P120A720RS7356
EP type number : 0 412 726 919

Governor
Governor design. : RE30
Governor no. : 0 421 890 017

Cust. part No. : RE 61658

Customer-spec. information
Customer : DEERE
Motor : 6081 HF001
Power kW : 205.0

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 077

Inlet press. bar : 2.0
Tolerance bar : ± 0.1

Test nozzle holde
assembly : 1 688 901 103

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

Pump-specific values
in Section (B)
must be observed!

(A) INJECTION PUMP SETTINGS
No basic setting.
Setting of constant delivery
under Section C.

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : ± 1.0

Prestroke mm : 3.60
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery blocking

*NW after s.o.d. : 9.75
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

(B) POSITIONER TESTING

Warm-up time: 3 minutes at
n=600 min-1, Uact = 2.5 V

TESTING & SETTING RACK TRAVEL SENSOR POSITION

Engine speed min-1: 0

Setting point
(P, R and H pump)

Uact V : 3.100
CRT mm : 13.00
Tolerance mm : +/- 0.05
Check
tolerance mm : +/- 0.10

Check value
(P, R and H pump)

Uact V : 1.700
CRT mm : 6.15
Tolerance mm : +/- 0.25
Check
tolerance mm : +/- 0.30

Setting point
(M pump)

Uact V : 3.100
CRT mm : 12.50
Tolerance mm : +/- 0.05
Check
tolerance mm : +/- 0.10

Check value
(M pump)

Uact V : 1.700
CRT mm : 5.50
Tolerance mm : +/- 0.25
Check
tolerance mm : +/- 0.30

Stop position

Uact V : Value with
deenergised adjusting magnet
and control rod in
stop position.

CRT mm : 0.75
Tolerance mm : +/- 0.25
Check
tolerance mm : +/- 0.35

ENGINE-SPEED SENSOR
(All P and R pumps not
H and M pumps)

Test with control rod
in stop position

Engine speed min-1: 60
Amplitude V : 1.4
Tolerance V : +/- 0.6
Check
tolerance V : +/- 1.20

Engine speed min-1: 600
Difference
Amplitude to
Amplitude V : max.1.4

(C) INJECTION PUMP WITH POSITIONER

TEST POINT V1

Rated speed rpm : 1050
Uact V : 3.030
Del. quantity
cm³/1000 strokes : 213.0
Tolerance
cm³/1000 strokes : +/- 1.0
Check tolerance
cm³/1000S. : +/- 4.0
Spreed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0
FUEL DELIVERY CHARACTERISTICS

Rated speed rpm : 700
Uact V : 3.120
Del. quantity
cm³/1000 strokes : 237.0
Tolerance
cm³/1000 strokes : +/- 3.0
Check tolerance
cm³/1000S. : +/- 6.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

TEST POINT L1

Rated speed rpm : 450
Uact V : 1.740

Tolerance Volt : ± 0.060
Check tolerance
Volt : ± 0.060
Del. quantity
cm³/1000 strokes : 26.0
Tolerance
cm³/1000 strokes : ± 3.0
Speed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 10.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Uact V : 4.550
Del. quantity
cm³/1000 strokes : 120.0
Tolerance
cm³/1000 strokes : ± 20.0
Check tolerance
cm³/1000S. : ± 25.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 25.07.97
Test oil : ISO 4113
Combination No. : 0 402 796 819
Injection pump
Pump designation : PES6P120A720RS7407
EP type number : 0 412 726 955
Governor
Governor design. : RE30
Governor no. : 0 421 890 037

Cust. part No. : RE 65679

Customer-spec. information
Customer : DEERE
Motor : 6101HRW10
Power KW : 266.0

TEST BENCH REQUIREMENTS

Inlet line : 4.2
Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 2 417 413 077
Inlet press. bar : 2.0
Tolerance bar : ± 0.1
Test nozzle holde
assembly : 1 688 901 103
Opening pressure
bar : 208.5
Tolerance bar : ± 1.5
Test lines : 1 680 750 089
Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

Pump-specific values
in Section (B)
must be observed!

(A) INJECTION PUMP SETTINGS
No basic setting.
Setting of constant delivery
under Section C.

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : ± 1.0

Prestroke mm : 3.60
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance *NW : ± 0.75

Start of delivery blocking

*NW after s.o.d. : 9.25
Tolerance : ± 0.50
Check
tolerance *NW : ± 0.75

Barrel no. : 1

Beginning of delivery differende
and maximum rack
travel : 15.00

Difference * CS : 3.75

(B) POSITIONER TESTING

Warm-up time: 3 minutes at
n=600 min⁻¹, Uact = 2.5 V

TESTING & SETTING RACK TRAVEL SENSOR
POSITION

Engine speed min⁻¹: 0

Setting point
(P, R and H pump)

Uact V : 3.100
CRT mm : 13.00
Tolerance mm : +/- 0.05
Check
tolerance mm : +/- 0.10

Check value
(P, R and H pump)

Uact V : 1.700
CRT mm : 6.15
Tolerance mm : +/- 0.25
Check
tolerance mm : +/- 0.30

Setting point
(M pump)

Uact V : 3.100
CRT mm : 12.50
Tolerance mm : +/- 0.05
Check
tolerance mm : +/- 0.10

Check value
(M pump)

Uact V : 1.700
CRT mm : 5.50
Tolerance mm : +/- 0.25
Check
tolerance mm : +/- 0.30

Stop position

Uact V : Value with
deenergised adjusting magnet
and control rod in
stop position.
CRT mm : 0.75

Tolerance mm : +/- 0.25
Check
tolerance mm : +/- 0.35

ENGINE-SPEED SENSOR
(All P and R pumps not
H and M pumps)

Test with control rod
in stop position

Engine speed min⁻¹: 60
Amplitude V : 1.4
Tolerance V : +/- 0.6
Check
tolerance V : +/- 1.20

Engine speed min⁻¹: 600
Difference
Amplitude to
Amplitude V : max.1.4

(C) INJECTION PUMP WITH POSITIONER

TEST POINT V1

Rated speed rpm : 1050
Uact V : 3.030
Del. quantity
cm³/1000 strokes : 213.0
Tolerance
cm³/1000 strokes : +/- 1.0
Check tolerance
cm³/1000s. : +/- 4.0
Speed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000s. : 9.0
FUEL DELIVERY CHARACTERISTICS

Rated speed rpm : 700
Uact V : 3.120
Del. quantity
cm³/1000 strokes : 237.0
Tolerance
cm³/1000 strokes : +/- 3.0
Check tolerance
cm³/1000s. : +/- 6.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000s. : 12.0

TEST POINT L1

Rated speed rpm	:	450
Uact V	:	1.740
Tolerance Volt	:	+− 0.060
Check tolerance		
Volt	:	+− 0.060
Del. quantity		
cm ³ /1000 strokes	:	26.0
Tolerance		
cm ³ /1000 strokes	:	+− 3.0
Spread		
Tolerance		
cm ³ /1000 strokes	:	6.0
Check tolerance		
cm ³ /1000S.	:	10.0

STARTING FUEL DELIVERY

Rated speed rpm	:	100
Uact V	:	4.550
Del. quantity		
cm ³ /1000 strokes	:	120.0
Tolerance		
cm ³ /1000 strokes	:	+− 20.0
Check tolerance		
cm ³ /1000S.	:	+− 25.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 04.07.96
Test oil : ISO 4113
Combination No. : 0 402 646 650
Injection pump
Pump designation : PE6P130A720RS7354
EP type number : 0 412 636 835
Governor
Governor design. : RQV300...950PA1002
: -2K
Governor no. : 0 421 815 434
Cust. part No. :

Customer-spec. information
Customer : IVECO-FRANCE
Motor : 8210.42.4000

TEST BENCH REQUIREMENTS

Inlet line : 4.2
Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 2 417 413 076
Inlet press. bar : 2.5
Tolerance bar : ± 0.1
Test nozzle holde
assembly : 1 688 901 105
Opening pressure
bar : 208.5
Tolerance bar : ± 1.5
Test lines : 1 680 750 075
Outside diameter : 8.0

G07

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 5.05
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 13.00
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Check
tolerance °NW : ± 0.40

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 950

Rack travel in mm : 13.20
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 274.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 4.0

Spreed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 275

Rack travel in mm : 5.40
Tolerance mm : + 0.10

Del. quantity
cm³/1000 strokes : 35.0

Tolerance
cm³/1000 strokes : + 3.0

Check tolerance
cm³/1000S. : + 6.0

Spreed

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1007
guide sleeve
travel mm : 8.73
Tolerance mm : + 0.15

Rated speed rpm : 300
guide sleeve
travel mm : 1.64
Tolerance mm : + 0.20

Rated speed rpm : 756
guide sleeve
travel mm : 6.16
Tolerance mm : + 0.25

Rated speed rpm : 500
guide sleeve
travel mm : 3.78
Tolerance mm : + 0.25

Rated speed rpm : 1340

guide sleeve
travel mm : 13.50
Tolerance mm : + 0.50

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1185

Rack travel in mm : 12.00
Tolerance mm : + 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 950
Aneroid pressure
hPa : 900

Del. quantity
cm³/1000 strokes : 274.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 4.0

Spreed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 114.0
tolerance degree : + 4.0

RATED SPEED
rack travel mm : 12.10
Rated speed rpm : 995

Tolerance 1/min : + 5
Check
speed 1/min : + 10

rack travel mm : 4.00
Rated speed rpm : 1110
Tolerance 1/min : + 15

Check
speed 1/min : + 20

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 1300

LOW IDLE

control lever
position degree : 69.0
tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 275
rack travel mm : 5.40
Tolerance mm : \pm 0.10

Rated speed rpm : 375

TORQUE CONTROL

Rated speed rpm : 950
rack travel mm : 13.20
Tolerance mm : \pm 0.05

Rated speed rpm : 700
rack travel mm : 12.75
Tolerance mm : \pm 0.10

Rated speed rpm : 550
rack travel mm : 12.05
Tolerance mm : \pm 0.10

Rated speed rpm : 300
rack travel mm : 11.80
Tolerance mm : \pm 0.30

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 950
Pressure hPa : 900
rack travel mm : 13.20
Tolerance mm : \pm 0.05

Rated speed rpm : 950
Pressure hPa : -
rack travel mm : 8.30
Tolerance mm : \pm 0.40

MEASUREMENT

Rated speed rpm : 950

Pressure hPa : 320
rack travel mm : 9.85
Tolerance mm : \pm 0.20

Pressure hPa : 610
rack travel mm : 12.10
Tolerance mm : \pm 0.05

Start interlock

Rated speed rpm : $>$ 180
Rated speed rpm : $<$ 220

Check
speed 1/min : $>$ 160
Check
speed 1/min : $<$ 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 900
Rated speed rpm : 550
Del. quantity
cm³/1000 strokes : 286.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 550
Del. quantity
cm³/1000 strokes : 173.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 155.0
Tolerance
cm³/1000 strokes : \pm 15.0
Check tolerance
cm³/1000S. : \pm 19.0

LOW IDLE

Rated speed rpm : 275
Rack travel in mm : 5.40

Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 35.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000s. : \pm 6.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000s. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 30.07.97
Test oil : ISO 4113

Combination No. : 0 402 746 608

Injection pump
Pump designation : PES6P120A320RS7359
EP type number : 0 412 726 925

Governor
Governor design. : RQ275/1050PA1275
Governor no. : 0 421 801 805

Cust. part No. : CCEP 5157A 66-222

Customer-spec. information
Customer : RENAULT V.I.
Motor : MIDR062045 F/C41
Power KW : 152.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 078

Inlet press. bar : 2.5
Tolerance bar : ± 0.1

Overflow quantity
min. l/h : 220
Tolerance l/h : ± 10.0

Test nozzle holde
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.70
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 20.25
Tolerance mm : ± 0.75

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

*NW after s.o.d. : -0.95
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

CRT ZERO POSITION

Rack travel in mm : 11.70
Tolerance mm : \pm 0.05

BASIC SETTING

Rated speed rpm : 1050

Del. quantity
cm³/1000 strokes : 176.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Spreed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 275

Rack travel in mm : -6.10
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 28.0

Tolerance
cm³/1000 strokes : \pm 2.0

Check tolerance
cm³/1000S. : \pm 5.0

Spreed

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1122
guide sleeve
travel mm : 7.06
Tolerance mm : \pm 0.15

Rated speed rpm : 275
guide sleeve
travel mm : 2.44
Tolerance mm : \pm 0.20

Rated speed rpm : 1050
guide sleeve
travel mm : 6.70
Tolerance mm : \pm 0.10

Rated speed rpm : 648
guide sleeve
travel mm : 6.18
Tolerance mm : \pm 0.10

Rated speed rpm : 375
guide sleeve
travel mm : 5.00
Tolerance mm : \pm 0.10

Rated speed rpm : 450
guide sleeve
travel mm : 6.00
Tolerance mm : \pm 0.10

Rated speed rpm : 1300
guide sleeve
travel mm : 11.50
Tolerance mm : \pm 0.50

Rated speed rpm : 873
guide sleeve
travel mm : 6.52
Tolerance mm : \pm 0.10

GUIDE SLEEVE POSITION

control lever
position degree : 109
Rated speed rpm : 500

Rack travel in mm : 20.00
Tolerance mm : \pm 0.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1050
Aneroid pressure
hPa : 1000

Del. quantity
cm³/1000 strokes : 176.0
Tolerance

cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

Spreed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 276.0
tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : -1.00
Rated speed rpm : 1115
Tolerance 1/min : \pm 5

rack travel mm : -7.70
Rated speed rpm : 1205
Tolerance 1/min : \pm 15

rack travel mm : -11.20
Tolerance mm : \pm 0.50
Rated speed rpm : 1350

LOW IDLE

control lever
position degree : 256.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 200

CRT mm min. : $<$ -4.20

Testing:

Rated speed rpm : 275
rack travel mm : -6.10
Tolerance mm : \pm 0.10

rack travel mm : -9.70
Rated speed rpm : 365
Tolerance 1/min : \pm 20

TORQUE CONTROL

Rated speed rpm : 1050

Rated speed rpm : 600
rack travel mm : 1.00
Tolerance mm : \pm 0.10

Rated speed rpm : 800
rack travel mm : 0.80
Tolerance mm : \pm 0.20

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1000
rack travel mm : 1.00
Tolerance mm : \pm 0.10

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : -0.75
Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 280
rack travel mm : 0.65
Tolerance mm : \pm 0.15

Pressure hPa : 160
rack travel mm : -0.15
Tolerance mm : \pm 0.05

Start interlock

Rated speed rpm : $>$ 100
Rated speed rpm : $<$ 195

Check
speed 1/min : $>$ 80
Check
speed 1/min : $<$ 215

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1000
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 193.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000s. : \pm 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 500

Del. quantity
cm³/1000 strokes : 149.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 155.0
Tolerance
cm³/1000 strokes : ± 15.0
Check tolerance
cm³/1000S. : ± 19.0

LOW IDLE

Rated speed rpm : 275

Rack travel in mm : -6.10
Tolerance mm : ± 0.10
Del. quantity
cm³/1000 strokes : 28.0
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 5.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 13.08.97
Test oil : ISO 4113
Combination No. : F 000 409 888
Injection pump
Pump designation : PES6A80D320RS1271
EP type number : 9 400 083 058
Governor
Governor design. : RSV350...1400A2C2179
: R
Governor no. : 9 420 083 281
Cust. part No. :

Customer-spec. information

Customer : MWM
Motor : D229-6
Power KW : 100.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1
Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1 419 992 198
Inlet press. bar : 1.5
Test nozzle holde
assembly : 0 681 343 009
Opening pressure
bar : 173.5
Tolerance bar : ± 1.5
Test lines : 1 680 750 003
Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0
Prestroke mm : 2.25
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10
Rack travel in mm : 10.50
Tolerance mm : ± 1.50
Firing order : 1- 5- 3- 6- 2-
: 4
Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75
Beginning of delivery differende
and maximum rack
travel : 10.50
Tolerance mm : ± 1.50
Difference ° CS : 4.50

BASIC SETTING

Rated speed rpm : 1400
Rack travel in mm : 10.25
Tolerance mm : ± 0.05
Del. quantity
cm³/1000 strokes : 61.0

Tolerance		
cm3/1000 strokes	: +- 0.5	
<hr/>		
Check tolerance		
cm3/1000S.	: +- 2.0	
<hr/>		
Spreed		
<hr/>		
Tolerance		
cm3/1000 strokes	: 2.5	
<hr/>		
Check tolerance		
cm3/1000S.	: 4.0	
<hr/>		
Rated speed rpm	: 400	
Rack travel in mm	: 7.20	
Tolerance mm	: +- 0.10	
Del. quantity		
cm3/1000 strokes	: 12.5	
Tolerance		
cm3/1000 strokes	: +- 1.5	
Check tolerance		
cm3/1000S.	: +- 3.5	
Spreed		
Tolerance		
cm3/1000 strokes	: 4.0	
Check tolerance		
cm3/1000S.	: 6.0	

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever	
position degree	: - 3
Rated speed rpm	: 800
Rack travel in mm	: 0.65
Tolerance mm	: +- 0.35
governor spring	
pre-tension	
click setting x	: 4.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm	: 1400
Aneroid pressure	
hPa	: -
Del. quantity	
cm3/1000 strokes	: 61.0

Tolerance	
cm3/1000 strokes	: +- 0.5
Check tolerance	
cm3/1000S.	: +- 2.0
Spreed	
Tolerance	
cm3/1000 strokes	: 2.5
Check tolerance	
cm3/1000S.	: 4.0

CONTROL LEVER

control lever	
position degree	: 90.0
tolerance degree	: +- 4.0

RATED SPEED

rack travel mm	: 9.20
Rated speed rpm	: 1435
Tolerance 1/min	: +- 5
rack travel mm	: 4.00
Rated speed rpm	: 1510
Tolerance 1/min	: +- 15

rack travel mm	: 0.85
Tolerance mm	: +- 0.55
Rated speed rpm	: 1650

LOW IDLE

control lever	
position degree	: 63.0
tolerance degree	: +- 4.0

Setting point w/out bumper spring

Rated speed rpm	: 400
rack travel mm	: 6.70
Tolerance mm	: +- 0.10

Rated speed rpm	: 100
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CRT mm min.	: > 19.00
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Testing:

Rated speed rpm	: 400
rack travel mm	: 7.20
Tolerance mm	: +- 0.10

rack travel mm	: 2.00
Rated speed rpm	: 640
Tolerance 1/min	: +- 30

TORQUE CONTROL

Rated speed rpm : 1400
rack travel mm : 10.25
Tolerance mm : \pm 0.05

Rated speed rpm : 500
rack travel mm : 10.75
Tolerance mm : \pm 0.05

Rated speed rpm : 800
rack travel mm : 10.55
Tolerance mm : \pm 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 52.0
Tolerance
cm³/1000 strokes : \pm 1.5
Check tolerance
cm³/1000S. : \pm 3.0

Aneroid pressure

hPa : -
Rated speed rpm : 800
Del. quantity
cm³/1000 strokes : 55.0
Tolerance
cm³/1000 strokes : \pm 1.5
Check tolerance
cm³/1000S. : \pm 3.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.00
Tolerance mm : \pm 1.00

LOW IDLE

Rated speed rpm : 400
Rack travel in mm : 7.20
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 12.5
Tolerance
cm³/1000 strokes : \pm 1.5
Check tolerance
cm³/1000S. : \pm 3.5
Spreed
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 6.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 29.04.97
Test oil : ISO 4113

Combination No. : 0 400 846 598

Injection pump
Pump designation : PES6A90D410RS2813
EP type number : 0 410 896 089

Governor
Governor design. : RQV300...1050AB1265L
Governor no. : 0 420 212 234

Cust. part No. :

Customer-spec. information
Customer : IVECO-FIAT
Motor : 8065.25.094
Power KW : 145.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holder
assembly : 0 681 343 009

Opening pressure
bar : 173.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 2.50
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.35
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm : 12.25
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 80.0

Tolerance
cm³/1000 strokes : ± 0.5

Check tolerance
cm³/1000S. : ± 2.5

Speed

Tolerance
cm3/1000 strokes : 3.0

Check tolerance
cm3/1000S. : 7.0

Rated speed rpm : 400

Rack travel in mm : 8.30
Tolerance mm : \pm 0.10

Del. quantity
cm3/1000 strokes : 12.0
Tolerance
cm3/1000 strokes : \pm 2.0
Check tolerance
cm3/1000S. : \pm 4.0

Speed
Tolerance
cm3/1000 strokes : 4.5
Check tolerance
cm3/1000S. : 7.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 740
guide sleeve
travel mm : 4.95
Tolerance mm : \pm 0.25

Rated speed rpm : 380
guide sleeve
travel mm : 1.85
Tolerance mm : \pm 0.25

Rated speed rpm : 400
guide sleeve
travel mm : 2.25
Tolerance mm : \pm 0.25

Rated speed rpm : 460
guide sleeve
travel mm : 2.85
Tolerance mm : \pm 0.25

Rated speed rpm : 1105
guide sleeve
travel mm : 8.35
Tolerance mm : \pm 0.25

GUIDE SLEEVE POSITION

G19

control lever
position degree : - 1
Rated speed rpm : 1200

Rack travel in mm : 9.50
Tolerance mm : \pm 2.70

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1050
Aneroid pressure
hPa : -
Del. quantity
cm3/1000 strokes : 80.0
Tolerance
cm3/1000 strokes : \pm 0.5
Check tolerance
cm3/1000S. : \pm 2.5
Speed
Tolerance
cm3/1000 strokes : 3.0
Check tolerance
cm3/1000S. : 7.0

CONTROL LEVER

control lever
position degree : 116.0
tolerance degree : \pm 4.0

RATED SPEED
rack travel mm : 11.20
Rated speed rpm : 1095
Tolerance 1/min : \pm 5

rack travel mm : 4.00
Rated speed rpm : 1205
Tolerance 1/min : \pm 15

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 1320

LOW IDLE

control lever
position degree : 79.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 300
CRT mm min. : > 10.80

Testing:

Rated speed rpm : 400
rack travel mm : 8.30
Tolerance mm : \pm 0.10

Rated speed rpm : 525

TORQUE CONTROL

Dimension a mm : 1.30
Rated speed rpm : 1050
rack travel mm : 12.25
Tolerance mm : \pm 0.05

Rated speed rpm : 500
rack travel mm : 13.55
Tolerance mm : \pm 0.05

Rated speed rpm : 750
rack travel mm : 12.80
Tolerance mm : \pm 0.10

Rated speed rpm : 850
rack travel mm : 12.45
Tolerance mm : \pm 0.15

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 700
rack travel mm : 13.55
Tolerance mm : \pm 0.05

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 12.25
Tolerance mm : \pm 0.10

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 580
rack travel mm : 13.35
Tolerance mm : \pm 0.05

Pressure hPa : 540
rack travel mm : 12.90
Tolerance mm : \pm 0.10

Start interlock

Rated speed rpm : > 100
Rated speed rpm : < 320

Check
speed 1/min : > 80
Check
speed 1/min : < 340

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 82.0
Tolerance
cm³/1000 strokes : \pm 1.5
Check tolerance
cm³/1000S. : \pm 3.5

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 70.0
Tolerance
cm³/1000 strokes : \pm 0.5
Check tolerance
cm³/1000S. : \pm 2.5

STARTING FUEL DELIVERY

ESS test: With 24 V solenoid activated,
rack must reach start position in max.
control lever setting.

Rated speed rpm : 100
rack travel mm : 20.25
Tolerance mm : \pm 0.75
Del. quantity
cm³/1000 strokes : 115.0
Tolerance
cm³/1000 strokes : \pm 7.5
Check tolerance
cm³/1000S. : \pm 10.0

LOW IDLE

Rated speed rpm : 400

Rack travel in mm : 8.30
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 12.0
Tolerance
cm³/1000 strokes : \pm 2.0

Check tolerance
cm³/1000S. : \pm 4.0

Spreed
Tolerance
cm³/1000 strokes : 4.5
Check tolerance
cm³/1000S. : 7.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 29.04.97
Test oil : ISO 4113

Combination No. : 0 400 846 600

Injection pump
Pump designation : PES6A90D410RS2818
EP type number : 0 410 896 091

Governor
Governor design. : RQV300...1500AB1266L
Governor no. : 0 420 212 236

Cust. part No. :

Customer-spec. information
Customer : IVECO-FIAT
Motor : 8060.25.670
Power KW : 175.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 419 922 198

Inlet press. bar : 1.5

Test nozzle holder
assembly : 0 681 343 009

Opening pressure
bar : 173.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 2.80
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.75

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1500

Rack travel in mm : 12.35
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 79.5

Tolerance
cm³/1000 strokes : ± 0.5

Check tolerance
cm³/1000s. : ± 2.5

Speed

Tolerance
cm³/1000 strokes : 3.0

Check tolerance
cm³/1000S. : 4.5

Rated speed rpm : 300

Rack travel in mm : 9.50
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 15.0

Tolerance
cm³/1000 strokes : ± 3.0

Check tolerance
cm³/1000S. : ± 5.0

Spread
Tolerance
cm³/1000 strokes : 2.5

Check tolerance
cm³/1000S. : 4.5

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 640
guide sleeve
travel mm : 3.45
Tolerance mm : ± 0.25

Rated speed rpm : 250
guide sleeve
travel mm : 1.15
Tolerance mm : ± 0.25

Rated speed rpm : 435
guide sleeve
travel mm : 2.25
Tolerance mm : ± 0.25

Rated speed rpm : 485
guide sleeve
travel mm : 2.55
Tolerance mm : ± 0.25

Rated speed rpm : 1610
guide sleeve
travel mm : 8.35
Tolerance mm : ± 0.25

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1740

Rack travel in mm : 11.30
Tolerance mm : ± 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1500
Aneroid pressure
hPa : -

Del. quantity
cm³/1000 strokes : 79.5

Tolerance
cm³/1000 strokes : ± 0.5

Check tolerance
cm³/1000S. : ± 2.5

Spread
Tolerance
cm³/1000 strokes : 3.0

Check tolerance
cm³/1000S. : 4.5

CONTROL LEVER

control lever
position degree : 121.0
tolerance degree : ± 4.0

RATED SPEED
rack travel mm : 11.30
Rated speed rpm : 1595
Tolerance 1/min : ± 5

rack travel mm : 4.00
Rated speed rpm : 1755
Tolerance 1/min : ± 15

rack travel mm : 0.50
Tolerance mm : ± 0.50
Rated speed rpm : 1870

LOW IDLE

control lever
position degree : 76.0
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 200

CRT mm min. : > 10.60

Testing:

Rated speed rpm : 300
rack travel mm : 9.50
Tolerance mm : \pm 0.10

TORQUE CONTROL

Rated speed rpm : 1500
rack travel mm : 12.35
Tolerance mm : \pm 0.05

Rated speed rpm : 500
rack travel mm : 12.40
Tolerance mm : \pm 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : -
Rated speed rpm : 1000
Del. quantity
cm³/1000 strokes : 75.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 3.5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.25
Tolerance mm : \pm 0.75
Del. quantity
cm³/1000 strokes : 150.0
Tolerance
cm³/1000 strokes : \pm 5.0
Check tolerance
cm³/1000S. : \pm 8.0

LOW IDLE

Rated speed rpm : 300

Rack travel in mm : 9.50
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 15.0

Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 5.0
Spreed
Tolerance
cm³/1000 strokes : 2.5
Check tolerance
cm³/1000S. : 4.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 29.04.97
Test oil : ISO 4113

Combination No. : 0 400 846 607

Injection pump
Pump designation : PES6A90D410RS2813
EP type number : 0 410 896 089

Governor
Governor design. : RQV300...1050AB1265
 : -3L
Governor no. : 0 420 212 241

Cust. part No. : 112069

Customer-spec. information
Customer : IVECO-FIAT
Motor : 8065.25.099
Power KW : 135.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde
assembly : 0 681 343 009

Opening pressure
bar : 173.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 2.80
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
 : 4

Phasing : 0-60-120-180-240
 : -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm : 12.75
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 78.0

Tolerance
cm³/1000 strokes : ± 0.5

Check tolerance
cm³/1000S. : ± 2.5

Speed

Tolerance
cm³/1000 strokes : 3.0

Check tolerance
cm³/1000S. : 7.0

Rated speed rpm : 425

Rack travel in mm : 8.50
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 9.0

Tolerance
cm³/1000 strokes : ± 2.0

Check tolerance
cm³/1000S. : ± 4.0

Spread
Tolerance
cm³/1000 strokes : 4.5

Check tolerance
cm³/1000S. : 7.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 750
guide sleeve
travel mm : 5.05
Tolerance mm : ± 0.25

Rated speed rpm : 380
guide sleeve
travel mm : 1.85
Tolerance mm : ± 0.25

Rated speed rpm : 430
guide sleeve
travel mm : 2.55
Tolerance mm : ± 0.25

Rated speed rpm : 460
guide sleeve
travel mm : 2.85
Tolerance mm : ± 0.25

Rated speed rpm : 1130
guide sleeve
travel mm : 8.25
Tolerance mm : ± 0.25

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1200

Rack travel in mm : 9.50
Tolerance mm : ± 2.70

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1050
Aneroid pressure
hPa : 700

Del. quantity
cm³/1000 strokes : 78.0

Tolerance
cm³/1000 strokes : ± 0.5

Check tolerance
cm³/1000S. : ± 2.5

Spread
Tolerance
cm³/1000 strokes : 3.0

Check tolerance
cm³/1000S. : 7.0

CONTROL LEVER

control lever
position degree : 117.0
tolerance degree : ± 4.0

RATED SPEED
rack travel mm : 11.70
Rated speed rpm : 1125
Tolerance 1/min : ± 5

rack travel mm : 4.00
Rated speed rpm : 1235
Tolerance 1/min : ± 15

rack travel mm : 0.50
Tolerance mm : ± 0.50
Rated speed rpm : 1320

LOW IDLE

control lever
position degree : 79.0
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 325
CRT mm min. : > 11.00

Testing:

Rated speed rpm : 425
rack travel mm : 8.50
Tolerance mm : \pm 0.10

Rated speed rpm : 535

TORQUE CONTROL

Rated speed rpm : 1050
rack travel mm : 12.75
Tolerance mm : \pm 0.05

Rated speed rpm : 500
rack travel mm : 14.25
Tolerance mm : \pm 0.05

Rated speed rpm : 750
rack travel mm : 13.90
Tolerance mm : \pm 0.05

Rated speed rpm : 900
rack travel mm : 13.25
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 700
rack travel mm : 14.20
Tolerance mm : \pm 0.05

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 12.95
Tolerance mm : \pm 0.05

MEASUREMENT

Rated speed rpm : 500
Pressure hPa : 450
rack travel mm : 13.25
Tolerance mm : \pm 0.15

Pressure hPa : 500
rack travel mm : 13.85
Tolerance mm : \pm 0.05

Start interlock

Rated speed rpm : > 290
Rated speed rpm : < 340

Check
speed 1/min : > 270
Check
speed 1/min : < 360

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 700
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 86.0
Tolerance
cm³/1000 strokes : \pm 1.5
Check tolerance
cm³/1000s. : \pm 3.5

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 66.0
Tolerance
cm³/1000 strokes : \pm 0.5
Check tolerance
cm³/1000s. : \pm 2.5

STARTING FUEL DELIVERY

ESS test: With 12 V solenoid activated,
rack must reach start position in max.
control lever setting.

Rated speed rpm : 100
rack travel mm : 20.25
Tolerance mm : \pm 0.75
Del. quantity
cm³/1000 strokes : 105.0
Tolerance
cm³/1000 strokes : \pm 7.5
Check tolerance
cm³/1000s. : \pm 10.0

LOW IDLE

Rated speed rpm : 425

Rack travel in mm : 8.50
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 9.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0
Spreed
Tolerance
cm³/1000 strokes : 4.5
Check tolerance
cm³/1000S. : 7.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 01.08.97
Test oil : ISO 4113

Combination No. : 0 400 863 008

Injection pump
Pump designation : PES3A90D320/3RS2658
EP type number : 0 410 893 004

Governor
Governor design. : RSV325...1500A2C505
 : -3R
Governor no. : 0 420 233 229

Cust. part No. : 1-7545

Customer-spec. information
Customer : MWM
Motor : D2268-3
Power KW : 49.5

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holder
assembly : 0 681 343 009

Opening pressure
bar : 173.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 3.00
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 2- 3

Phasing : 0-120-240
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Beginning of delivery difference

and maximum rack
travel : 9.00
Difference °CS : 4.00

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 11.25
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 90.0

Tolerance
cm3/1000 strokes : +- 0.5

Check tolerance
cm3/1000S. : +- 2.5

Spread

Tolerance
cm3/1000 strokes : 3.0

Check tolerance
cm3/1000S. : 5.0

Rated speed rpm : 325

Rack travel in mm : 9.80

Tolerance mm : +- 0.10

Del. quantity
cm3/1000 strokes : 49.5

Tolerance
cm3/1000 strokes : +- 3.0

Check tolerance
cm3/1000S. : +- 5.0

Spread

Tolerance
cm3/1000 strokes : 2.5

Check tolerance
cm3/1000S. : 4.5

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : +- 0.20

governor spring
pre-tension
click setting x : 2.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100
Aneroid pressure
hPa : -
Del. quantity
cm3/1000 strokes : 90.0

H02

Tolerance
cm3/1000 strokes : +- 0.5
Check tolerance
cm3/1000S. : +- 2.5
Spread
Tolerance
cm3/1000 strokes : 3.0
Check tolerance
cm3/1000S. : 5.0

CONTROL LEVER

control lever
position degree : 93.0
tolerance degree : +- 4.0

RATED SPEED
rack travel mm : 10.20
Rated speed rpm : 1145
Tolerance 1/min : +- 5

rack travel mm : 4.00
Rated speed rpm : 1195
Tolerance 1/min : +- 15

rack travel mm : 0.85
Tolerance mm : +- 0.55
Rated speed rpm : 1375

rack travel mm : 4.00
Rated speed rpm : 1225
Tolerance 1/min : +- 15

LOW IDLE

control lever
position degree : 67.0
tolerance degree : +- 4.0

Setting point w/out bumper spring

Rated speed rpm : 325
rack travel mm : 9.30
Tolerance mm : +- 0.10

Testing:

Rated speed rpm : 325
rack travel mm : 9.80
Tolerance mm : +- 0.10

rack travel mm : 2.00
Rated speed rpm : 510
Tolerance 1/min : +- 30

TORQUE CONTROL

Rated speed rpm : 1100
rack travel mm : 11.25
Tolerance mm : \pm 0.05

Rated speed rpm : 500
rack travel mm : 11.30
Tolerance mm : \pm 0.10

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 18.90
Tolerance mm : \pm 2.10
Del. quantity
cm³/1000 strokes : 115.0

LOW IDLE

Rated speed rpm : 325

Rack travel in mm : 9.80
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 49.5
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 5.0
Spreed
Tolerance
cm³/1000 strokes : 2.5
Check tolerance
cm³/1000S. : 4.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 01.08.97
Test oil : ISO 4113
Combination No. : 0 400 863 019
Injection pump
Pump designation : PES3A90D320/3RS2826
EP type number : 0 410 893 007
Governor
Governor design. : RSV325...1150A5C505
 : -5R
Governor no. : 0 420 233 289
Cust. part No. :

Customer-spec. information
Customer : MWM
Motor : TD 226 B3

TEST BENCH REQUIREMENTS

Inlet line : 3.1
Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1 419 992 198
Inlet press. bar : 1.5
Test nozzle holder
assembly : 0 681 343 009
Opening pressure
bar : 173.5
Tolerance bar : ± 1.5
Test lines : 1 680 750 014
Outside diameter : 6.0

H04

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0
Prestroke mm : 3.00
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10
Rack travel in mm : 10.50
Tolerance mm : ± 1.50
Firing order : 1- 2- 3
Phasing : 0-120-240
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Beginning of delivery difference
and maximum rack
travel : 9.00
Difference ° CS : 4.00

BASIC SETTING

Rated speed rpm : 1150
Rack travel in mm : 9.90
Tolerance mm : ± 0.10
Del. quantity
cm³/1000 strokes : 68.0
Tolerance
cm³/1000 strokes : ± 0.5

Check tolerance
cm³/1000S. : +- 2.5

Spread

Tolerance
cm³/1000 strokes : 3.0

Check tolerance
cm³/1000S. : 5.0

Rated speed rpm : 325

Rack travel in mm : 5.70

Tolerance mm : +- 0.10

Del. quantity
cm³/1000 strokes : 8.0

Tolerance
cm³/1000 strokes : +- 3.0

Check tolerance
cm³/1000S. : +- 5.0

Spread
Tolerance

cm³/1000 strokes : 2.5

Check tolerance
cm³/1000S. : 4.5

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : +- 0.20

governor spring
pre-tension
click setting x : 3.25

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 750
Aneroid pressure
hPa : -
Del. quantity
cm³/1000 strokes : 68.0
Tolerance
cm³/1000 strokes : +- 0.5

Check tolerance
cm³/1000S. : +- 2.5
Spread
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000S. : 5.0

CONTROL LEVER

control lever
position degree : 98.0
tolerance degree : +- 4.0

RATED SPEED
rack travel mm : 8.90
Rated speed rpm : 1205
Tolerance 1/min : +- 5

rack travel mm : 4.00
Rated speed rpm : 1245
Tolerance 1/min : +- 15

rack travel mm : 0.85
Tolerance mm : +- 0.55
Rated speed rpm : 1410

rack travel mm : 4.00
Rated speed rpm : 1260
Tolerance 1/min : +- 15

LOW IDLE

control lever
position degree : 67.0
tolerance degree : +- 4.0

Setting point w/out bumper spring

Rated speed rpm : 325
rack travel mm : 6.20
Tolerance mm : +- 0.10

Testing:

Rated speed rpm : 325
rack travel mm : 5.70
Tolerance mm : +- 0.10

rack travel mm : 2.00
Rated speed rpm : 430
Tolerance 1/min : +- 30

TORQUE CONTROL

Rated speed rpm : 1150
rack travel mm : 9.90
Tolerance mm : \pm 0.10

Rated speed rpm : 500
rack travel mm : 9.95
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : -
Rated speed rpm : 1150
Del. quantity
cm³/1000 strokes : 76.5
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000s. : \pm 3.5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.25
Tolerance mm : \pm 0.75
Del. quantity
cm³/1000 strokes : 137.0
Tolerance
cm³/1000 strokes : \pm 5.0
Check tolerance
cm³/1000s. : \pm 8.0

LOW IDLE

Rated speed rpm : 325
Rack travel in mm : 5.70
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 8.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000s. : \pm 5.0
Speed
Tolerance
cm³/1000 strokes : 2.5

Check tolerance
cm³/1000s. : 4.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 01.08.97
Test oil : ISO 4113

Combination No. : 0 400 863 024

Injection pump
Pump designation : PES3A95D410/3RS2905
EP type number : 0 410 893 996

Governor
Governor design. : RSV325...1250A5C917L
Governor no. : 0 420 232 639

Cust. part No. : 0423 2328 KY

Customer-spec. information
Customer : KHD-DMI
Motor : F3L912
Power KW : 44.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holder
assembly : 0 681 343 009

Opening pressure
bar : 173.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 3.00
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 3- 2

Phasing : 0-120-240
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1250

Rack travel in mm : 11.35
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 76.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 3.0

Speed

Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 8.0

Rated speed rpm : 325

Rack travel in mm : 8.50
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 11.5

Tolerance
cm³/1000 strokes : \pm 2.0

Check tolerance
cm³/1000S. : \pm 4.5

Spread
Tolerance
cm³/1000 strokes : 5.5

Check tolerance
cm³/1000S. : 9.9

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : FREE
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : \pm 0.20

governor spring
pre-tension
click setting x : 4.25

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1250
Aneroid pressure
hPa : -

Del. quantity
cm³/1000 strokes : 76.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 3.0

Spread
Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 8.0

CONTROL LEVER

control lever
position degree : 107.0
tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 10.35
Rated speed rpm : 1295

Tolerance 1/min : \pm 5

rack travel mm : 4.00
Rated speed rpm : 1355

Tolerance 1/min : \pm 15

rack travel mm : 0.85
Tolerance mm : \pm 0.55

Rated speed rpm : 1530

rack travel mm : 4.00
Rated speed rpm : 1380

Tolerance 1/min : \pm 15

LOW IDLE

control lever
position degree : 74.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 325
rack travel mm : 8.00

Tolerance mm : \pm 0.10

Rated speed rpm : 100

CRT mm min. : $>$ 19.50

Testing:

Rated speed rpm : 325
rack travel mm : 8.50

Tolerance mm : \pm 0.10

rack travel mm : 2.00
Rated speed rpm : 510

Tolerance 1/min : \pm 30

TORQUE CONTROL

Rated speed rpm : 1250
rack travel mm : 11.35
Tolerance mm : \pm 0.05

Rated speed rpm : 500

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 17.00
Tolerance mm : \pm 0.75
Del. quantity
cm³/1000 strokes : 90.0
Tolerance
cm³/1000 strokes : \pm 7.5
Check tolerance
cm³/1000s. : \pm 10.0

LOW IDLE

Rated speed rpm : 325
Rack travel in mm : 8.50
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 11.5
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000s. : \pm 4.5
Spreed
Tolerance
cm³/1000 strokes : 5.5
Check tolerance
cm³/1000s. : 9.9

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 01.08.97
Test oil : ISO 4113
Combination No. : 0 400 864 057
Injection pump
Pump designation : PES4A90D320/3RS2659
EP type number : 0 410 894 028
Governor
Governor design. : RSV325...1500A2C505
: -2R
Governor no. : 0 420 233 196
Cust. part No. :

Customer-spec. information
Customer : MWM
Motor : D226B-4
Power KW : 73.5

TEST BENCH REQUIREMENTS

Inlet line : 3.1
Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1 419 992 198
Inlet press. bar : 1.5
Test nozzle holder
assembly : 0 681 343 009
Opening pressure
bar : 173.5
Tolerance bar : ± 1.5
Test lines : 1 680 750 014
Outside diameter : 6.0

H10

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 3.00
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Beginning of delivery difference
and maximum rack
travel : 9.00
Difference ° CS : 4.00

BASIC SETTING

Rated speed rpm : 1500

Rack travel in mm : 11.25
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 90.5

Tolerance
cm³/1000 strokes : ± 0.5

Check tolerance
cm³/1000S. : + 2.5

Spread

Tolerance
cm³/1000 strokes : 3.0

Check tolerance
cm³/1000S. : 5.0

Rated speed rpm : 325

Rack travel in mm : 7.10

Tolerance mm : + 0.10

Del. quantity

cm³/1000 strokes : 11.0

Tolerance

cm³/1000 strokes : + 3.0

Check tolerance

cm³/1000S. : + 5.0

Spread

Tolerance

cm³/1000 strokes : 2.5

Check tolerance

cm³/1000S. : 4.5

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever

position degree : - 3

Rated speed rpm : 800

Rack travel in mm : 0.50

Tolerance mm : + 0.20

governor spring

pre-tension

click setting x : 4.75

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1500

Aneroid pressure

hPa : -

Del. quantity

cm³/1000 strokes : 90.5

Tolerance

cm³/1000 strokes : + 0.5

Check tolerance
cm³/1000S. : + 2.5

Spread

Tolerance
cm³/1000 strokes : 3.0

Check tolerance
cm³/1000S. : 5.0

CONTROL LEVER

control lever

position degree : 113.0

tolerance degree : + 4.0

RATED SPEED

rack travel mm : 9.50

Rated speed rpm : 1545

Tolerance 1/min : + 5

rack travel mm : 4.00

Rated speed rpm : 1605

Tolerance 1/min : + 15

rack travel mm : 0.85

Tolerance mm : + 0.55

Rated speed rpm : 1780

rack travel mm : 4.00

Rated speed rpm : 1630

Tolerance 1/min : + 15

LOW IDLE

control lever

position degree : 74.0

tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 325

rack travel mm : 6.60

Tolerance mm : + 0.10

Rated speed rpm : 100

CRT mm min. : > 19.50

Testing:

Rated speed rpm : 325

rack travel mm : 7.10

Tolerance mm : + 0.10

rack travel mm : 2.00

Rated speed rpm : 495
Tolerance 1/min : \pm 30

TORQUE CONTROL

Rated speed rpm : 1500
rack travel mm : 11.25
Tolerance mm : \pm 0.05

Rated speed rpm : 500
rack travel mm : 11.30
Tolerance mm : \pm 0.10

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.25
Tolerance mm : \pm 0.75
Del. quantity
cm³/1000 strokes : 135.0
Tolerance
cm³/1000 strokes : \pm 5.0
Check tolerance
cm³/1000S. : \pm 8.0

LOW IDLE

Rated speed rpm : 325

Rack travel in mm : 7.10
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 11.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 5.0
Spreed
Tolerance
cm³/1000 strokes : 2.5
Check tolerance
cm³/1000S. : 4.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 01.08.97
Test oil : ISO 4113

Combination No. : 0 400 864 094

Injection pump
Pump designation : PES4A90D320/3RS2743
EP type number : 0 410 894 034

Governor
Governor design. : RSV325...1150A5C505
: -5R
Governor no. : U 420 233 289

Cust. part No. :

Customer-spec. information
Customer : MWM
Motor : TD226B-4
Power KW : 63.0

TEST BENCH REQUIREMENTS

Inlet line : 1.3

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holder
assembly : 0 681 343 009

Opening pressure
bar : 173.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 3.00
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Beginning of delivery difference

and maximum rack
travel : 9.00
Difference ° CS : 4.00

BASIC SETTING

Rated speed rpm : 1150

Rack travel in mm : 9.55
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 72.0

Tolerance
cm³/1000 strokes : ± 0.5

Check tolerance
cm3/1000S. : + 2.5

Spread

Tolerance
cm3/1000 strokes : 3.0

Check tolerance
cm3/1000S. : 5.0

Rated speed rpm : 325

Rack travel in mm : 6.70

Tolerance mm : + 0.10

Del. quantity

cm3/1000 strokes : 13.0

Tolerance

cm3/1000 strokes : + 3.0

Check tolerance

cm3/1000S. : + 5.0

Spread

Tolerance

cm3/1000 strokes : 2.5

Check tolerance

cm3/1000S. : 4.5

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever

position degree : - 3

Rated speed rpm : 800

Rack travel in mm : 0.50

Tolerance mm : + 0.20

governor spring

pre-tension

click setting x : 3.20

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1150

Aneroid pressure

hPa : -

Del. quantity

cm3/1000 strokes : 72.0

Tolerance

cm3/1000 strokes : + 0.5

Check tolerance
cm3/1000S. : + 2.5

Spread

Tolerance

cm3/1000 strokes : 3.0

Check tolerance

cm3/1000S. : 5.0

CONTROL LEVER

control lever

position degree : 100.0

tolerance degree : + 4.0

RATED SPEED

rack travel mm : 8.50

Rated speed rpm : 1195

Tolerance 1/min : + 5

rack travel mm : 4.00

Rated speed rpm : 1225

Tolerance 1/min : + 15

rack travel mm : 0.85

Tolerance mm : + 0.55

Rated speed rpm : 1330

rack travel mm : 4.00

Rated speed rpm : 1245

Tolerance 1/min : + 15

LOW IDLE

control lever

position degree : 69.0

tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 325

rack travel mm : 6.20

Tolerance mm : + 0.10

Rated speed rpm : 100

CRT mm min. : > 19.50

Testing:

Rated speed rpm : 325

rack travel mm : 6.70

Tolerance mm : + 0.10

rack travel mm : 2.00

Rated speed rpm : 445
Tolerance 1/min : \pm 30

TORQUE CONTROL

Rated speed rpm : 1150
rack travel mm : 9.55
Tolerance mm : \pm 0.05

Rated speed rpm : 500
rack travel mm : 9.60
Tolerance mm : \pm 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa :

Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 56.0
Tolerance
cm³/1000 strokes : \pm 2.5
Check tolerance
cm³/1000S. : \pm 4.5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.25
Tolerance mm : \pm 0.75
Del. quantity
cm³/1000 strokes : 143.0
Tolerance
cm³/1000 strokes : \pm 5.0
Check tolerance
cm³/1000S. : \pm 8.0

LOW IDLE

Rated speed rpm : 325

Rack travel in mm : 6.70
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 13.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 5.0
Spreed

Tolerance
cm³/1000 strokes : 2.5
Check tolerance
cm³/1000S. : 4.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 10.03.97
Test oil : ISO 4113

Combination No. : 0 400 864 102

Injection pump
Pump designation : PES4A95D410/3RS2789
EP type number : 0 410 894 995

Governor
Governor design. : RSV325...1250A5C861L
Governor no. : 0 420 232 624

Cust. part No. : 0423 1789 KY

Customer-spec. information
Customer : KHD-DMI
Motor : F4L912/913_NEU
Power KW : 59.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holder
assembly : 0 681 343 009

Opening pressure
bar : 173.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 3.00
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1250

Rack travel in mm : 11.35
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 76.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 3.0

Speed

Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 8.0

Rated speed rpm : 325

Rack travel in mm : 8.50
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 11.5

Tolerance
cm³/1000 strokes : ± 2.0

Check tolerance
cm³/1000S. : ± 4.5

Spread
Tolerance
cm³/1000 strokes : 5.5

Check tolerance
cm³/1000S. : 9.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : FREE
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : ± 0.20

governor spring
pre-tension
click setting x : 3.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1250
Aneroid pressure
hPa : -

Del. quantity
cm³/1000 strokes : 76.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 3.0

Spread
Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 8.0

CONTROL LEVER

control lever
position degree : 102.0
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 10.35
Rated speed rpm : 1295
Tolerance 1/min : ± 5

rack travel mm : 4.00
Rated speed rpm : 1339
Tolerance 1/min : ± 15

rack travel mm : 0.85
Tolerance mm : ± 0.55
Rated speed rpm : 1510

rack travel mm : 4.00
Rated speed rpm : 1360
Tolerance 1/min : ± 15

LOW IDLE

control lever
position degree : 69.0
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 325
rack travel mm : 8.00
Tolerance mm : ± 0.10

Rated speed rpm : 100

CRT mm min. : > 19.50

Testing:

Rated speed rpm : 325
rack travel mm : 8.50
Tolerance mm : ± 0.10

rack travel mm : 2.00
Rated speed rpm : 473
Tolerance 1/min : ± 30

TORQUE CONTROL

Rated speed rpm : 1250
rack travel mm : 11.35
Tolerance mm : \pm 0.05

Rated speed rpm : 500

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.25
Tolerance mm : \pm 0.75
Del. quantity
cm³/1000 strokes : 130.0
Tolerance
cm³/1000 strokes : \pm 7.5
Check tolerance
cm³/1000s. : \pm 10.0

LOW IDLE

Rated speed rpm : 325
rack travel in mm : 8.50
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 11.5
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000s. : \pm 4.5
Spreed
Tolerance
cm³/1000 strokes : 5.5
Check tolerance
cm³/1000s. : 9.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 02.08.97
Test oil : ISO 4113

Combination No. : 0 400 864 103

Injection pump
Pump designation : PES4A95D410/3RS2789
EP type number : 0 410 894 995

Governor
Governor design. : RSV325...1250A5C871L
Governor no. : 0 420 232 626

Cust. part No. : 0423 1876 KY

Customer-spec. information
Customer : KHD-DMI
Motor : BF4L 913
Power KW : 78.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde
assembly : 0 681 343 009

Opening pressure
bar : 173.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 3.00
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1250

Rack travel in mm : 13.50
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 87.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 3.0

Speed

Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm3/1000S. : 8.0

Rated speed rpm : 325

Rack travel in mm : 9.60
Tolerance mm : \pm 0.10
Del. quantity
cm3/1000 strokes : 14.0
Tolerance
cm3/1000 strokes : \pm 2.0
Check tolerance
cm3/1000S. : \pm 4.5
Speed
Tolerance
cm3/1000 strokes : 5.5
Check tolerance
cm3/1000S. : 9.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : FREE
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : \pm 0.20

governor spring
pre-tension
click setting x : 3.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1250
Aneroid pressure
hPa : -
Del. quantity
cm3/1000 strokes : 87.0
Tolerance
cm3/1000 strokes : \pm 1.0
Check tolerance
cm3/1000S. : \pm 3.0
Speed
Tolerance
cm3/1000 strokes : 3.5
Check tolerance
cm3/1000S. : 8.0

CONTROL LEVER

control lever
position degree : 102.0
tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 12.50
Rated speed rpm : 1295
Tolerance 1/min : \pm 5

rack travel mm : 4.00
Rated speed rpm : 1355
Tolerance 1/min : \pm 15

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 1565

rack travel mm : 4.00
Rated speed rpm : 1415
Tolerance 1/min : \pm 15

LOW IDLE

control lever
position degree : 69.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 325
rack travel mm : 9.10
Tolerance mm : \pm 0.10

Rated speed rpm : 100

CRT mm min. : $>$ 19.50

Testing:

Rated speed rpm : 325
rack travel mm : 9.60
Tolerance mm : \pm 0.10

rack travel mm : 2.00
Rated speed rpm : 605
Tolerance 1/min : \pm 30

TORQUE CONTROL

Rated speed rpm : 1250
rack travel mm : 13.50
Tolerance mm : \pm 0.05

Rated speed rpm : 500
rack travel mm : 14.20
Tolerance mm : \pm 0.10

Rated speed rpm : 750
rack travel mm : 13.90
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1400
rack travel mm : 14.20
Tolerance mm : \pm 0.10

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 13.30
Tolerance mm : \pm 0.10

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 300
rack travel mm : 13.70
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 85.0
Tolerance
cm³/1000 strokes : \pm 5.0
Check tolerance
cm³/1000S. : \pm 3.0
Spreed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 8.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 68.0

Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.25
Tolerance mm : \pm 0.75
Del. quantity
cm³/1000 strokes : 120.0
Tolerance
cm³/1000 strokes : \pm 7.5
Check tolerance
cm³/1000S. : \pm 10.0

LOW IDLE

Rated speed rpm : 325

Rack travel in mm : 9.60
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 14.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Spreed
Tolerance
cm³/1000 strokes : 5.5
Check tolerance
cm³/1000S. : 9.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 02.08.97
Test oil : ISO 4113

Combination No. : 0 400 864 104

Injection pump
Pump designation : PES4A95D410/3RS2789
EP type number : 0 410 894 995

Governor
Governor design. : RSV325...1250A5C877L
Governor no. : 0 420 232 632

Cust. part No. : 0423 2047 KY

Customer-spec. information
Customer : KHD-DMI
Motor : BF4L 913 C
Power KW : 78.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holder
assembly : 0 681 343 009

Opening pressure
bar : 173.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 3.00
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1250

Rack travel in mm : 12.70
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 92.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 3.0

Speed

Tolerance
cm3/1000 strokes : 3.5

Check tolerance
cm3/1000S. : 8.0

Rated speed rpm : 325

Rack travel in mm : 8.50

Tolerance mm : \pm 0.10

Del. quantity
cm3/1000 strokes : 11.5

Tolerance
cm3/1000 strokes : \pm 2.0

Check tolerance
cm3/1000S. : \pm 4.5

Speed
Tolerance

cm3/1000 strokes : 5.5

Check tolerance
cm3/1000S. : 9.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : FREE
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : \pm 0.20

governor spring
pre-tension
click setting x : 3.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1250
Aneroid pressure
hPa : -

Del. quantity
cm3/1000 strokes : 92.0

Tolerance
cm3/1000 strokes : \pm 1.0

Check tolerance
cm3/1000S. : \pm 3.0

Speed
Tolerance
cm3/1000 strokes : 3.5

Check tolerance
cm3/1000S. : 8.0

CONTROL LEVER

control lever
position degree : 104.0
tolerance degree : \pm 4.0

RATED SPEED
rack travel mm : 11.70
Rated speed rpm : 1295
Tolerance 1/min : \pm 5

rack travel mm : 4.00
Rated speed rpm : 1355
Tolerance 1/min : \pm 15

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 1555

rack travel mm : 4.00
Rated speed rpm : 1405
Tolerance 1/min : \pm 15

LOW IDLE

control lever
position degree : 70.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 325
rack travel mm : 8.00
Tolerance mm : \pm 0.10

Rated speed rpm : 100

CRT mm min. : $>$ 19.50

Testing:

Rated speed rpm : 325
rack travel mm : 8.50
Tolerance mm : \pm 0.10

rack travel mm : 2.00
Rated speed rpm : 580
Tolerance 1/min : \pm 30

TORQUE CONTROL

Rated speed rpm : 1250
rack travel mm : 12.70
Tolerance mm : \pm 0.05

Rated speed rpm : 500

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.25
Tolerance mm : \pm 0.75
Del. quantity
cm³/1000 strokes : 130.0
Tolerance
cm³/1000 strokes : \pm 7.5
Check tolerance
cm³/1000S. : \pm 10.0

LOW IDLE

Rated speed rpm : 325
Rack travel in mm : 8.50
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 11.5
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Speed
Tolerance
cm³/1000 strokes : 5.5
Check tolerance
cm³/1000S. : 9.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 05.08.97
Test oil : ISO 4113

Combination No. : 0 400 864 105

Injection pump
Pump designation : PES4A95D410/3RS2789
EP type number : 0 410 894 995

Governor
Governor design. : RSV325...900A1C878L
Governor no. : 0 420 232 633

Cust. part No. : 0423 2062 KY

Customer-spec. information
Customer : KHD-DMI
Motor : BF4L 913
Power KW : 64.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holder
assembly : 0 681 343 009

Opening pressure
bar : 173.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 3.00
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 850

Rack travel in mm : 13.30

Del. quantity
cm³/1000 strokes : 92.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 3.0

Speed

Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 8.0

Rated speed rpm : 325

Rack travel in mm : 8.20

Del. quantity
cm³/1000 strokes : 11.5

Tolerance
cm³/1000 strokes : ± 2.0

Check tolerance
cm³/1000S. : ± 4.5

Speed

Tolerance
cm³/1000 strokes : 5.5

Check tolerance
cm³/1000S. : 9.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : FREE
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : ± 0.20

governor spring
pre-tension
click setting x : 2.25

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 850
Aneroid pressure
hPa : -

Del. quantity
cm³/1000 strokes : 92.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 3.0

Speed

Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 8.0

CONTROL LEVER

control lever
position degree : 89.0
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 12.30

Rated speed rpm : 895

Tolerance 1/min : ± 5

rack travel mm : 4.00

Rated speed rpm : 940

Tolerance 1/min : ± 10

rack travel mm : 0.85

Tolerance mm : ± 0.55

Rated speed rpm : 1090

rack travel mm : 4.00

Rated speed rpm : 955

LOW IDLE

control lever
position degree : 67.0
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 325

rack travel mm : 7.70

Tolerance mm : ± 0.10

Rated speed rpm : 100

CRT mm min. : > 19.50

Testing:

Rated speed rpm : 325

rack travel mm : 8.20

rack travel mm : 2.00

Rated speed rpm : 415

Tolerance 1/min : ± 30

TORQUE CONTROL

Rated speed rpm : 850

rack travel mm : 13.30

Rated speed rpm : 500

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.25
Tolerance mm : \pm 0.75
Del. quantity
cm³/1000 strokes : 130.0
Tolerance
cm³/1000 strokes : \pm 7.5
Check tolerance
cm³/1000S. : \pm 10.0

LOW IDLE

Rated speed rpm : 325
Rack travel in mm : 8.20
Del. quantity
cm³/1000 strokes : 11.5
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Spreed
Tolerance
cm³/1000 strokes : 5.5
Check tolerance
cm³/1000S. : 9.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 31.07.97
Test oil : ISO 4113
Combination No. : 0 400 876 440
Injection pump
Pump designation : PES6A90D410RS2757
EP type number : 0 410 896 086
Governor
Governor design. : RSV425...1075A1C2266
: -2L
Governor no. : 0 420 232 640
Cust. part No. : 99459159

Customer-spec. information
Customer : IVECO-FIAT
Motor : 8065.25.085
Power KW : 104.0

TEST BENCH REQUIREMENTS

Inlet line : 1.3
Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1 419 992 198
Inlet press. bar : 1.5
Test nozzle holder
assembly : 0 681 343 009
Opening pressure
bar : 173.5
Tolerance bar : ± 1.5
Test lines : 1 680 750 014
Outside diameter : 6.0

H28

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 2.30
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1075

Rack travel in mm : 12.90
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 102.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm3/1000S. : +- 3.0

Speed

Tolerance
cm3/1000 strokes : 3.5

Check tolerance
cm3/1000S. : 8.0

Rated speed rpm : 425

Rack travel in mm : 7.50

Tolerance mm : +- 0.10

Del. quantity
cm3/1000 strokes : 13.0

Tolerance
cm3/1000 strokes : +- 2.0

Check tolerance
cm3/1000S. : +- 4.5

Speed
Tolerance
cm3/1000 strokes : 5.5

Check tolerance
cm3/1000S. : 9.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : +- 0.20

governor spring
pre-tension
click setting x : 4.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1075
Aneroid pressure
hPa : 900
Del. quantity
cm3/1000 strokes : 102.0
Tolerance
cm3/1000 strokes : +- 1.0

Check tolerance
cm3/1000S. : +- 3.0

Speed

Tolerance
cm3/1000 strokes : 3.5

Check tolerance
cm3/1000S. : 8.0

CONTROL LEVER

control lever
position degree : 106.0
tolerance degree : +- 4.0

RATED SPEED

rack travel mm : 11.90

Rated speed rpm : 1120

Tolerance 1/min : +- 5

rack travel mm : 4.00

Rated speed rpm : 1165

Tolerance 1/min : +- 15

rack travel mm : 0.85

Tolerance mm : +- 0.55

Rated speed rpm : 1340

rack travel mm : 4.00

Rated speed rpm : 1190

Tolerance 1/min : +- 15

LOW IDLE

control lever
position degree : 75.0
tolerance degree : +- 4.0

Setting point w/out bumper spring

Rated speed rpm : 425
rack travel mm : 7.00
Tolerance mm : +- 0.10

Rated speed rpm : 100

CRT mm min. : > 19.50

Testing:

Rated speed rpm : 425
rack travel mm : 7.50
Tolerance mm : +- 0.10

rack travel mm : 2.00

Rated speed rpm : 555
Tolerance 1/min : \pm 30

TORQUE CONTROL

Rated speed rpm : 1075
rack travel mm : 12.90
Tolerance mm : \pm 0.05

Rated speed rpm : 700
rack travel mm : 13.10
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 900
rack travel mm : 12.95
Tolerance mm : \pm 0.10

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 11.30
Tolerance mm : \pm 0.10

MEASUREMENT

Rated speed rpm : 500
Pressure hPa : 430
rack travel mm : 12.20
Tolerance mm : \pm 0.10

Pressure hPa : 500
rack travel mm : 12.55
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 900
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 98.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0

Aneroid pressure
hPa : -

J02

Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 68.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 3.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.25
Tolerance mm : \pm 0.75
Del. quantity
cm³/1000 strokes : 84.0
Tolerance
cm³/1000 strokes : \pm 7.5
Check tolerance
cm³/1000S. : \pm 10.0

LOW IDLE

Rated speed rpm : 425
Rack travel in mm : 7.50
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 13.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Spreed
Tolerance
cm³/1000 strokes : 5.5
Check tolerance
cm³/1000S. : 9.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 13.06.95
Test oil : ISO 4113

Combination No. : 0 400 866 189

Injection pump
Pump designation : PES6A100D320/3RS2691
EP type number : 9 410 230 025

Governor
Governor design. : RSV400...1100A0C2190
: -65R
Governor no. : 0 420 233 304

Cust. part No. : 3921145

Customer-spec. information
Customer : CDC
Motor : 6 CTA 8.3ltr
Power KW : 174.5

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0
x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : ± 1.0

Prestroke mm : 2.85
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

Start of delivery blocking

*NW after s.o.d. : 11.00
Tolerance : ± 0.50
Check
tolerance *NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 12.75
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 129.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 3.0

Spreed

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 6.5

Rack travel in mm : 5.60
Tolerance mm : ± 0.10

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : ± 0.20

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100
Aneroid pressure
hPa : -
Del. quantity
cm³/1000 strokes : 129.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 3.0
Spreed
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 6.5

CONTROL LEVER

J04

control lever
position degree : 95.0
tolerance degree : ± 4.0

RATED SPEED
rack travel mm : 11.70
Rated speed rpm : 1145
Tolerance 1/min : ± 5

rack travel mm : 4.00
Rated speed rpm : 1215
Tolerance 1/min : ± 5

rack travel mm : 0.85
Tolerance mm : ± 0.55
Rated speed rpm : 1300

rack travel mm : 4.00
Rated speed rpm : 1220
Tolerance 1/min : ± 15

LOW IDLE

control lever
position degree : 74.0
tolerance degree : ± 4.0

Control lever difference
Grad : 21.0
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 400
rack travel mm : 5.10
Tolerance mm : ± 0.10

Rated speed rpm : 100

CRT mm min. : > 19.00

Testing:

Rated speed rpm : 400
rack travel mm : 5.60
Tolerance mm : ± 0.10

TORQUE CONTROL

Rated speed rpm : 1100
rack travel mm : 12.75
Tolerance mm : ± 0.05

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.00
Tolerance mm : \pm 1.00
Del. quantity
cm³/1000 strokes : 155.0
Tolerance
cm³/1000 strokes : \pm 10.0
Check tolerance
cm³/1000s. : \pm 15.0

LOW IDLE

Rack travel in mm : 5.60
Tolerance mm : \pm 0.10

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 31.07.97
Test oil : ISO 4113

Combination No. : 0 402 196 705

Injection pump
Pump designation : PES6P120A720RS3347
EP type number : 0 412 026 777

Governor
Governor design. : RE30
Governor no. : 0 421 890 029

Cust. part No. : RE 63514

Customer-spec. information
Customer : DEERE
Motor : 6076 HRW35
Power KW : 181.0

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 077

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter : 3.0
x length mm : 600

REMARKS

Pump-specific values
in Section (B)
must be observed!

(A) INJECTION PUMP SETTINGS
No basic setting.
Setting of constant delivery
under Section C.

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : ± 1.0

Prestroke mm : 3.60
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery blocking

*NW after s.o.d. : 10.50
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

(B) POSITIONER TESTING

Warm-up time: 3 minutes at
n=600 min⁻¹, Uact = 2.5 V

TESTING & SETTING RACK TRAVEL SENSOR POSITION

Engine speed min⁻¹: 0

Setting point
(P, R and H pump)

Uact V : 3.100
CRT mm : 13.00
Tolerance mm : +/- 0.05
Check
tolerance mm : +/- 0.10

Check value
(P, R and H pump)

Uact V : 1.700
CRT mm : 6.15
Tolerance mm : +/- 0.25
Check
tolerance mm : +/- 0.30

Setting point
(M pump)

Uact V : 3.100
CRT mm : 12.50
Tolerance mm : +/- 0.05
Check
tolerance mm : +/- 0.10

Check value
(M pump)

Uact V : 1.700
CRT mm : 5.50
Tolerance mm : +/- 0.25
Check
tolerance mm : +/- 0.30

Stop position

Uact V : Value with
deenergised adjusting magnet
and control rod in
stop position.

CRT mm : 0.75
Tolerance mm : +/- 0.25
Check
tolerance mm : +/- 0.35

J07

ENGINE-SPEED SENSOR
(All P and R pumps not
H and M pumps)

Test with control rod
in stop position

Engine speed min⁻¹: 60
Amplitude V : 1.4
Tolerance V : +/- 0.6
Check
tolerance V : +/- 1.20

Engine speed min⁻¹: 600
Difference
Amplitude to
Amplitude V : max.1.4

(C) INJECTION PUMP WITH POSITIONER

TEST POINT V1

Rated speed rpm : 1100
Uact V : 2.710
Del. quantity
cm³/1000 strokes : 141.0
Tolerance
cm³/1000 strokes : +/- 1.0
Check tolerance
cm³/1000S. : +/- 4.0
Spread
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0
FUEL DELIVERY CHARACTERISTICS

Rated speed rpm : 700
Uact V : 2.710
Del. quantity
cm³/1000 strokes : 142.0
Tolerance
cm³/1000 strokes : +/- 3.0
Check tolerance
cm³/1000S. : +/- 6.0
Spread
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

TEST POINT L1

Rated speed rpm : 425
Uact V : 1.400

Tolerance Volt	:	± 0.060
Check tolerance		
Volt	:	± 0.060
Del. quantity		
cm ³ /1000 strokes	:	19.0
Tolerance		
cm ³ /1000 strokes	:	± 3.0
Speed		
Tolerance		
cm ³ /1000 strokes	:	6.0
Check tolerance		
cm ³ /1000s.	:	10.0

STARTING FUEL DELIVERY

Rated speed rpm	:	100
Uact V	:	4.600
Del. quantity		
cm ³ /1000 strokes	:	100.0
Tolerance		
cm ³ /1000 strokes	:	± 10.0
Check tolerance		
cm ³ /1000s.	:	± 13.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 04.08.97
Test oil : ISO 4113

Combination No. : 0 402 736 848

Injection pump
Pump designation : PES6P120A120RS7314
EP type number : 0 412 726 901

Governor
Governor design. : RQV400...1250PA964
: -23K
Governor no. : 0 421 815 374

Cust. part No. : 3921922

Customer-spec. information
Customer : CDC
Motor : 6BTA-A
Power KW : 142.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 2.0
Tolerance bar : ± 0.1

Test nozzle holder
assembly : 1 688 901 103

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0
x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : ± 1.0

Prestroke mm : 3.60
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 12.50
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery blocking

*NW after s.o.d. : 5.75
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1150

Rack travel in mm : 14.00

Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 169.5

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Spreed

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

Rated speed rpm : 420

Rack travel in mm : 5.70
Tolerance mm : \pm 0.20

Del. quantity
cm³/1000 strokes : 13.0

Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 5.0

Spreed

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1150

Aneroid pressure
hPa : 1200

Del. quantity
cm³/1000 strokes : 169.5

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Spreed

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

CONTROL LEVER

control lever
position degree : 116.5
tolerance degree : \pm 6.0

RATED SPEED

rack travel mm : 13.00
Rated speed rpm : 1300

Tolerance 1/min : \pm 15
Check

speed 1/min : \pm 20

rack travel mm : 4.00
Rated speed rpm : 1465

Tolerance 1/min : \pm 5
Check

speed 1/min : \pm 10

rack travel mm : 0.50
Tolerance mm : \pm 0.50

Rated speed rpm : 1550

LOW IDLE

control lever
position degree : 73.0
tolerance degree : \pm 6.0

Control lever difference
Grad : 43.5
tolerance degree : \pm 6.0

Setting point w/out bumper spring

Rated speed rpm : 300

CRT mm min. : $>$ 8.50

Testing:

Rated speed rpm : 420
rack travel mm : 5.70
Tolerance mm : \pm 0.20

Rated speed rpm : 420

TORQUE CONTROL

Rated speed rpm : 1150
rack travel mm : 14.00

Tolerance mm : \pm 0.05

Rated speed rpm : 800

rack travel mm : 12.60
Tolerance mm : + 0.20

Rated speed rpm : 1250
rack travel mm : 13.90
Tolerance mm : + 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 1150
Pressure hPa : 1200

Rated speed rpm : 1150
Pressure hPa : -
rack travel mm : 11.25
Tolerance mm : + 0.20

MEASUREMENT

Rated speed rpm : 1150

Pressure hPa : 500
rack travel mm : 13.15
Tolerance mm : + 0.30

Pressure hPa : 375
rack travel mm : 12.05
Tolerance mm : + 0.20

Start interlock

Rated speed rpm : > 100
Rated speed rpm : < 315

Check
speed 1/min : > 80
Check
speed 1/min : < 325

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 800
Del. quantity
cm3/1000 strokes : 141.0
Tolerance
cm3/1000 strokes : + 3.0
Check tolerance
cm3/1000S. : + 6.0
Spreed

Tolerance
cm3/1000 strokes : 8.0
Check tolerance
cm3/1000S. : 12.0

Aneroid pressure

hPa : -
Rated speed rpm : 1150
Del. quantity
cm3/1000 strokes : 112.5
Tolerance
cm3/1000 strokes : + 2.0
Check tolerance
cm3/1000S. : + 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 13.75
Tolerance mm : + 0.50
Del. quantity
cm3/1000 strokes : 155.0
Tolerance
cm3/1000 strokes : + 20.0
Check tolerance
cm3/1000S. : + 25.0

LOW IDLE

Rated speed rpm : 420

Rack travel in mm : 5.70
Tolerance mm : + 0.20
Del. quantity
cm3/1000 strokes : 13.0
Tolerance
cm3/1000 strokes : + 3.0
Check tolerance
cm3/1000S. : + 5.0
Spreed
Tolerance
cm3/1000 strokes : 4.0
Check tolerance
cm3/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 30.07.97
Test oil : ISO 4113
Combination No. : 0 402 736 867
Injection pump
Pump designation : PES6P120A120RS7350
EP type number : 0 412 726 921
Governor
Governor design. : RQV400...1150PA1172K
Governor no. : 0 421 815 438

Cust. part No. : 3928147,3934242(new)

Customer-spec. information
Customer : CDC
Motor : 6BTA-A
Power KW : 142.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2
Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 2 417 413 093
Inlet press. bar : 2.0
Tolerance bar : ± 0.1
Test nozzle holde
assembly : 1 688 901 103
Opening pressure
bar : 208.5
Tolerance bar : ± 1.5
Test lines : 1 680 750 015
Outside diameter : 6.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : ± 1.0
Prestroke mm : 3.60
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10
Rack travel in mm : 12.50
Tolerance mm : ± 0.50
Firing order : 1- 5- 3- 6- 2-
: 4
Phasing : 0-60-120-180-240
: -300
Start of delivery blocking
*NW after s.o.d. : 5.75
Tolerance : ± 0.50
Check
tolerance *NW : ± 0.75
Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1150
Rack travel in mm : 14.00
Tolerance mm : ± 0.05
Del. quantity
cm³/1000 strokes : 167.5

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 4.0

Speed

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

Rated speed rpm : 420

Rack travel in mm : 6.10

Tolerance mm : + 0.20

Del. quantity
cm³/1000 strokes : 13.0

Tolerance
cm³/1000 strokes : + 3.0

Check tolerance
cm³/1000S. : + 5.0

Speed

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1150

Aneroid pressure
hPa : 1200

Del. quantity
cm³/1000 strokes : 167.5

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 4.0

Speed

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

CONTROL LEVER

control lever
position degree : 116.5
tolerance degree : + 6.0

RATED SPEED

rack travel mm : 13.00

Rated speed rpm : 1300

Tolerance 1/min : + 15

Check
speed 1/min : + 20

rack travel mm : 4.00

Rated speed rpm : 1465

Tolerance 1/min : + 5

Check
speed 1/min : + 10

rack travel mm : 0.50

Tolerance mm : + 0.50

Rated speed rpm : 1550

LOW IDLE

control lever
position degree : 73.0
tolerance degree : + 6.0

Control lever difference

Grad : 43.5

tolerance degree : + 6.0

Setting point w/out bumper spring

Rated speed rpm : 300

CRT mm min. : > 8.50

Testing:

Rated speed rpm : 420

rack travel mm : 6.10

Tolerance mm : + 0.20

Rated speed rpm : 420

TORQUE CONTROL

Rated speed rpm : 1150

rack travel mm : 14.00

Tolerance mm : + 0.05

Rated speed rpm : 800

rack travel mm : 12.60

Tolerance mm : + 0.20

Rated speed rpm : 1250
rack travel mm : 14.00
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 1150
Pressure hPa : 1200

Rated speed rpm : 1150
Pressure hPa : -
rack travel mm : 10.95
Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 1150
Pressure hPa : 500
rack travel mm : 12.85
Tolerance mm : \pm 0.30

Pressure hPa : 375
rack travel mm : 11.75
Tolerance mm : \pm 0.20

Start interlock

Rated speed rpm : $>$ 100
Rated speed rpm : $<$ 315

Check
speed 1/min : $>$ 80
Check
speed 1/min : $<$ 325

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 800
Del. quantity
cm³/1000 strokes : 141.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : -

Rated speed rpm : 1150
Del. quantity
cm³/1000 strokes : 106.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 13.75
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 155.0
Tolerance
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000S. : \pm 25.0

LOW IDLE

Rated speed rpm : 420
Rack travel in mm : 6.10
Tolerance mm : \pm 0.20
Del. quantity
cm³/1000 strokes : 13.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 5.0
Spreed
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 25.07.97
Test oil : ISO 4113
Combination No. : 0 402 796 821
Injection pump
Pump designation : PES6P120A720RS7407
EP type number : 0 412 726 955

Governor
Governor design. : RE30
Governor no. : 0 421 890 017

Cust. part No. : RE 67492

Customer-spec. information
Customer : DEERE
Motor : 6101HZ013
Power KW : 260.0

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 077

Inlet press. bar : 2.0
Tolerance bar : ± 0.1

Test nozzle holder
assembly : 1 688 901 103

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

Pump-specific values
in Section (B)
must be observed!

(A) INJECTION PUMP SETTINGS
No basic setting.
Setting of constant delivery
under Section C.

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : ± 1.0

Prestroke mm : 3.60
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery blocking

*NW after s.o.d. : 9.25
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

Beginning of delivery difference

and maximum rack
travel : 15.00

Difference * CS : 3.75

(B) POSITIONER TESTING

Warm-up time: 3 minutes at
n=600 min⁻¹, Uact = 2.5 V

TESTING & SETTING RACK TRAVEL SENSOR
POSITION

Engine speed min⁻¹: 0

Setting point
(P, R and H pump)

Uact V : 3.100
CRT mm : 13.00
Tolerance mm : +/- 0.05
Check
tolerance mm : +/- 0.10

Check value
(P, R and H pump)

Uact V : 1.700
CRT mm : 6.15
Tolerance mm : +/- 0.25
Check
tolerance mm : +/- 0.30

Setting point
(M pump)

Uact V : 3.100
CRT mm : 12.50
Tolerance mm : +/- 0.05
Check
tolerance mm : +/- 0.10

Check value
(M pump)

Uact V : 1.700
CRT mm : 5.50
Tolerance mm : +/- 0.25
Check
tolerance mm : +/- 0.30

Stop position

Uact V : Value with
deenergised adjusting magnet
and control rod in
stop position.
CRT mm : 0.75

Tolerance mm : +/- 0.25
Check
tolerance mm : +/- 0.35

ENGINE-SPEED SENSOR
(All P and R pumps not
H and M pumps)

Test with control rod
in stop position

Engine speed min⁻¹: 60
Amplitude V : 1.4
Tolerance V : +/- 0.6
Check
tolerance V : +/- 1.20

Engine speed min⁻¹: 600
Difference
Amplitude to
Amplitude V : max. 1.4

(C) INJECTION PUMP WITH POSITIONER

TEST POINT V1

Rated speed rpm : 1050
Uact V : 3.030
Del. quantity
cm³/1000 strokes : 213.0
Tolerance
cm³/1000 strokes : +/- 1.0
Check tolerance
cm³/1000S. : +/- 4.0
Speed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0
FUEL DELIVERY CHARACTERISTICS

Rated speed rpm : 700
Uact V : 3.120
Del. quantity
cm³/1000 strokes : 237.0
Tolerance
cm³/1000 strokes : +/- 3.0
Check tolerance
cm³/1000S. : +/- 6.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

TEST POINT L1

Rated speed rpm : 450
Uact V : 1.740
Tolerance Volt : \pm 0.060
Check tolerance
Volt : \pm 0.060
Del. quantity
cm³/1000 strokes : 26.0
Tolerance
cm³/1000 strokes : \pm 3.0
Speed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 10.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Uact V : 4.550
Del. quantity
cm³/1000 strokes : 120.0
Tolerance
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000S. : \pm 25.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 24.07.97
Test oil : ISO 4113

Combination No. : 0 402 796 823

Injection pump
Pump designation : PES6P120A720RS7356
EP type number : 0 412 726 919

Governor
Governor design. : RE30
Governor no. : 0 421 890 017

Cust. part No. : RE 67884

Customer-spec. information
Customer : DEERE
Motor : 6081 HRW 05
Power KW : 198.0

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 077

Inlet press. bar : 2.0
Tolerance bar : ± 0.1

Test nozzle holder
assembly : 1 688 901 103

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

Pump-specific values
in Section (B)
must be observed!

(A) INJECTION PUMP SETTINGS
No basic setting.
Setting of constant delivery
under Section C.

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : ± 1.0

Prestroke mm : 3.60
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

Tolerance : ± 0.50
Check
tolerance *NW : ± 0.75

Start of delivery blocking

*NW after s.o.d. : 9.25
Tolerance : ± 0.50
Check
tolerance *NW : ± 0.75

Barrel no. : 1

Beginning of delivery difference
and maximum rack
travel : 15.00

Difference * CS : 2.50

(B) POSITIONER TESTING

Warm-up time: 3 minutes at
n=600 min⁻¹, Uact = 2.5 V

TESTING & SETTING RACK TRAVEL SENSOR
POSITION

Engine speed min⁻¹: 0

Setting point
(P, R and H pump)

Uact V : 3.100
CRT mm : 13.00
Tolerance mm : +/- 0.05
Check
tolerance mm : +/- 0.10

Check value
(P, R and H pump)

Uact V : 1.700
CRT mm : 6.15
Tolerance mm : +/- 0.25
Check
tolerance mm : +/- 0.30

Setting point
(M pump)

Uact V : 3.100
CRT mm : 12.50
Tolerance mm : +/- 0.05
Check
tolerance mm : +/- 0.10

Check value
(M pump)

Uact V : 1.700
CRT mm : 5.50
Tolerance mm : +/- 0.25
Check
tolerance mm : +/- 0.30

Stop position

Uact V : Value with
deenergised adjusting magnet
and control rod in
stop position.

CRT mm : 0.75

Tolerance mm : +/- 0.25
Check
tolerance mm : +/- 0.35

ENGINE-SPEED SENSOR

(All P and R pumps not
H and M pumps)

Test with control rod
in stop position

Engine speed min⁻¹: 60
Amplitude V : 1.4
Tolerance V : +/- 0.6
Check
tolerance V : +/- 1.20

Engine speed min⁻¹: 600
Difference
Amplitude to
Amplitude V : max.1.4

(C) INJECTION PUMP WITH POSITIONER

TEST POINT V1

Rated speed rpm : 1050
Uact V : 3.030
Del. quantity
cm³/1000 strokes : 213.0
Tolerance
cm³/1000 strokes : +/- 1.0
Check tolerance
cm³/1000S. : +/- 4.0
Speed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0
FUEL DELIVERY CHARACTERISTICS

Rated speed rpm : 700
Uact V : 3.120
Del. quantity
cm³/1000 strokes : 237.0
Tolerance
cm³/1000 strokes : +/- 3.0
Check tolerance
cm³/1000S. : +/- 6.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

TEST POINT L1

Rated speed rpm : 450
Uact V : 1.740
Tolerance Volt : \pm 0.060
Check tolerance
Volt : \pm 0.060
Del. quantity
cm³/1000 strokes : 26.0
Tolerance
cm³/1000 strokes : \pm 3.0
Speed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 10.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Uact V : 4.550
Del. quantity
cm³/1000 strokes : 120.0
Tolerance
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000S. : \pm 25.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 31.07.97
Test oil : ISO 4113

Combination No. : F 002 A0Z 006

Injection pump
Pump designation : PES4A95D320/3RS2880
EP type number : 9 410 G37 214

Governor
Governor design. : RSV475...1100A0C880R
Governor no. : F 002 A20 206

Cust. part No. : 3930154

Customer-spec. information
Customer : CDC
Motor : 4BT3.9
Power KW : 63.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 2.0
Tolerance bar : ± 0.1

Test nozzle holde
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : ± 1.0

Prestroke mm : 2.45
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270

Start of delivery blocking

°NW after s.o.d. : 6.50
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 11.80
Tolerance mm : ± 0.05

Del. quantity
cm3/1000 strokes : 97.5

Tolerance
cm3/1000 strokes : + 1.0

Check tolerance
cm3/1000S. : + 3.0

Speed

Tolerance
cm3/1000 strokes : 4.0

Check tolerance
cm3/1000S. : 6.5

Rated speed rpm : 475

Rack travel in mm : 5.65

Tolerance mm : + 0.10

Del. quantity
cm3/1000 strokes : 20.5

Tolerance
cm3/1000 strokes : + 2.0

Check tolerance
cm3/1000S. : + 4.5

Speed

Tolerance
cm3/1000 strokes : 6.0

Check tolerance
cm3/1000S. : 8.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : + 0.20

governor spring
pre-tension
click setting x : 5.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100
Aneroid pressure
hPa : -
Del. quantity
cm3/1000 strokes : 97.5

Tolerance
cm3/1000 strokes : + 1.0

Check tolerance
cm3/1000S. : + 3.0

Speed

Tolerance
cm3/1000 strokes : 4.0

Check tolerance
cm3/1000S. : 6.5

CONTROL LEVER

control lever
position degree : 108.0

RATED SPEED

rack travel mm : 10.80
Rated speed rpm : 1155

Tolerance 1/min : + 5

rack travel mm : 6.00
Rated speed rpm : 1220
Tolerance 1/min : + 5

rack travel mm : 0.85
Tolerance mm : + 0.55
Rated speed rpm : 1400

rack travel mm : 6.00
Rated speed rpm : 1220
Tolerance 1/min : + 15

LOW IDLE

control lever
position degree : 89.0

Control lever difference
Grad : 19.0
tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 475
rack travel mm : 5.15
Tolerance mm : + 0.10

Rated speed rpm : 100

CRT mm min. : > 19.00

Testing:

Rated speed rpm : 475

rack travel mm : 5.65
Tolerance mm : \pm 0.10

TORQUE CONTROL

Rated speed rpm : 1100
rack travel mm : 11.80
Tolerance mm : \pm 0.05

Rated speed rpm : 750
rack travel mm : 12.10
Tolerance mm : \pm 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : -
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 100.5
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000s. : \pm 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 122.0
Tolerance
cm³/1000 strokes : \pm 10.0
Check tolerance
cm³/1000s. : \pm 15.0

LOW IDLE

Rated speed rpm : 475
Rack travel in mm : 5.65
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 20.5
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000s. : \pm 4.5
Spreed

Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000s. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 31.07.97
Test oil : ISO 4113

Combination No. : F 002 A0Z 071

Injection pump
Pump designation : PES6A95D320/3RS2928
EP type number : F 002 A10 019

Governor
Governor design. : RSV450...900A4C949R
Governor no. : F 002 A20 247

Cust. part No. : 3933099

Customer-spec. information
Customer : CDC
Motor : 6CT 8.3
Power KW : 104.3

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 2.0
Tolerance bar : ± 0.1

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : ± 1.0

Prestroke mm : 2.85
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery blocking

*NW after s.o.d. : 7.00
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 900

Rack travel in mm : 11.85
Tolerance mm : ± 0.05

<hr/>	
Del. quantity	
cm ³ /1000 strokes :	109.0
<hr/>	
Tolerance	
cm ³ /1000 strokes :	± 1.0
<hr/>	
Check tolerance	
cm ³ /1000S. :	± 3.0
<hr/>	
Spread	
<hr/>	
Tolerance	
cm ³ /1000 strokes :	4.0
<hr/>	
Check tolerance	
cm ³ /1000S. :	6.5
<hr/>	

Rated speed rpm :	425
Rack travel in mm :	9.00
Tolerance mm :	± 0.10
Del. quantity	
cm ³ /1000 strokes :	32.0
Tolerance	
cm ³ /1000 strokes :	± 2.0
Check tolerance	
cm ³ /1000S. :	± 4.5
Spread	
Tolerance	
cm ³ /1000 strokes :	6.0
Check tolerance	
cm ³ /1000S. :	8.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever	
position degree :	- 3
Rated speed rpm :	800
Rack travel in mm :	0.50
Tolerance mm :	± 0.20
governor spring	
pre-tension	
click setting x :	3.25

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm :	900
-------------------	-----

J25

Aneroid pressure	
hPa :	-
Del. quantity	
cm ³ /1000 strokes :	109.0
Tolerance	
cm ³ /1000 strokes :	± 1.0
Check tolerance	
cm ³ /1000S. :	± 3.0
Spread	
Tolerance	
cm ³ /1000 strokes :	4.0
Check tolerance	
cm ³ /1000S. :	6.5

CONTROL LEVER

control lever	
position degree :	108.5
tolerance degree :	± 4.0

RATED SPEED

rack travel mm :	10.80
Rated speed rpm :	945
Tolerance 1/min :	± 5

rack travel mm :	4.00
Rated speed rpm :	995
Tolerance 1/min :	± 5

rack travel mm :	0.85
Tolerance mm :	± 0.55
Rated speed rpm :	1050

rack travel mm :	4.00
Rated speed rpm :	1000
Tolerance 1/min :	± 5

LOW IDLE

control lever	
position degree :	88.0
tolerance degree :	± 4.0

Control lever difference	
Grad :	20.5
tolerance degree :	± 6.0

Setting point w/out bumper spring

Rated speed rpm :	100
-------------------	-----

CRT mm min. :	> 19.00
---------------	---------

Testing:

Rated speed rpm : 425
rack travel mm : 9.00
Tolerance mm : \pm 0.10

TORQUE CONTROL

Rated speed rpm : 900
rack travel mm : 11.85
Tolerance mm : \pm 0.05

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 119.0
Tolerance
cm³/1000 strokes : \pm 10.0
Check tolerance
cm³/1000S. : \pm 15.0

LOW IDLE

Rated speed rpm : 425
Rack travel in mm : 9.00
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 32.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Spreed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 12.08.97
Test oil : ISO 4113

Combination No. : 0 400 866 214

Injection pump
Pump designation : PES6A100D320/3RS2691
: -4
EP type number : 9 410 230 030

Governor
Governor design. : RSV450...1100AOC2190
: -84R
Governor no. : 0 420 233 323

Cust. part No. : 3921095

Customer-spec. information
Customer : CDC
Motor : 6CT830
Power KW : 134.2

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 1.5

Test nozzle holde
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0
x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : ± 1.0

Prestroke mm : 2.85
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

Start of delivery blocking

*NW after s.o.d. : 11.00
Tolerance : ± 0.50
Check
tolerance *NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 11.25
Tolerance mm : ± 0.05

Del. quantity cm ³ /1000 strokes	: 104.5
<hr/>	
Tolerance cm ³ /1000 strokes	: +- 1.0
<hr/>	
Check tolerance cm ³ /1000S.	: +- 3.0
<hr/>	
Spreed	
<hr/>	
Tolerance cm ³ /1000 strokes	: 4.0
<hr/>	
Check tolerance cm ³ /1000S.	: 6.5
<hr/>	

Rated speed rpm	: 450
<hr/>	
Rack travel in mm	: 5.80
Tolerance mm	: +- 0.10
Del. quantity cm ³ /1000 strokes	: 18.5
Tolerance cm ³ /1000 strokes	: +- 2.0
Check tolerance cm ³ /1000S.	: +- 4.5
Spreed	
Tolerance cm ³ /1000 strokes	: 6.0
Check tolerance cm ³ /1000S.	: 8.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever position degree	: - 3
Rated speed rpm	: 800
<hr/>	
Rack travel in mm	: 0.50
Tolerance mm	: +- 0.20
<hr/>	
governor spring pre-tension click setting x	: 4.25

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm	: 1100
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Aneroid pressure hPa	: -
Del. quantity cm ³ /1000 strokes	: 104.5
Tolerance cm ³ /1000 strokes	: +- 1.0
Check tolerance cm ³ /1000S.	: +- 3.0
Spreed	
Tolerance cm ³ /1000 strokes	: 4.0
Check tolerance cm ³ /1000S.	: 6.5

CONTROL LEVER

control lever position degree	: 103.0
tolerance degree	: +- 4.0

<hr/>	
RATED SPEED	
rack travel mm	: 10.20
Rated speed rpm	: 1145
Tolerance 1/min	: +- 5

rack travel mm	: 4.00
Rated speed rpm	: 1225
Tolerance 1/min	: +- 5

rack travel mm	: 0.85
Tolerance mm	: +- 0.55
Rated speed rpm	: 1300

rack travel mm	: 4.00
Rated speed rpm	: 1230
Tolerance 1/min	: +- 15

LOW IDLE

control lever position degree	: 85.0
tolerance degree	: +- 4.0

<hr/>	
Control lever difference	
Grad	: 18.0
tolerance degree	: +- 4.0

Setting point w/out bumper spring

Rated speed rpm	: 450
rack travel mm	: 5.30
Tolerance mm	: +- 0.10

Rated speed rpm	: 100
-----------------	-------

CRT mm min. : > 19.00

Testing:

Rated speed rpm : 450
rack travel mm : 5.80
Tolerance mm : \pm 0.10

TORQUE CONTROL

Rated speed rpm : 1100
rack travel mm : 11.25
Tolerance mm : \pm 0.05

Rated speed rpm : 750
rack travel mm : 12.10
Tolerance mm : \pm 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : -
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 113.5
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 148.0
Tolerance
cm³/1000 strokes : \pm 10.0
Check tolerance
cm³/1000S. : \pm 15.0

LOW IDLE

Rated speed rpm : 450
Rack travel in mm : 5.80
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 18.5

K01

Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Speed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 02.08.95
Test oil : ISO 4113
Combination No. : 0 400 876 399
Injection pump
Pump designation : PES6A100D410RS2754
EP type number : 0 410 806 002
Governor
Governor design. : RSV425...1100A0C2234
Governor no. : G 420 232 577

Cust. part No. : RE51910

Customer-spec. information
Customer : DEERE
Motor : 6076TRW01
Power kW : 106.0

TEST BENCH REQUIREMENTS

Inlet line : 4.2!!!!
Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1 457 413 010
Inlet press. bar : 1.5
Test nozzle holder
assembly : 1 688 901 101
Opening pressure
bar : 208.5
Tolerance bar : ± 1.5
Test lines : 1 680 750 008
Outside diameter : 6.0

K02

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : ± 1.0

Prestroke mm : 3.00
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

Start of delivery blocking

*NW after s.o.d. : 13.50
Tolerance : ± 0.50
Check
tolerance *NW : ± 0.75

Barrel no. : 1

Beginning of delivery difference

and maximum rack
travel : 10.50
Difference * CS : 7.00

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 9.75
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 90.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 3.0

Spread

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 6.5

Rated speed rpm : 425

Rack travel in mm : 5.80
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 28.0

Tolerance
cm³/1000 strokes : ± 2.0

Check tolerance
cm³/1000S. : ± 4.5

Spread

Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : ± 0.20

governor spring
pre-tension
click setting x : 4.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100
Aneroid pressure

hPa : -

Del. quantity
cm³/1000 strokes : 90.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 3.0

Spread

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 6.5

CONTROL LEVER

control lever
position degree : 98.0
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 8.70

Rated speed rpm : 1150

Tolerance 1/min : ± 5

rack travel mm : 4.00

Rated speed rpm : 1205

Tolerance 1/min : ± 5

rack travel mm : 0.85

Tolerance mm : ± 0.55

Rated speed rpm : 1350

rack travel mm : 4.00

Rated speed rpm : 1215

Tolerance 1/min : ± 15

LOW IDLE

control lever
position degree : 74.0
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 425

rack travel mm : 5.30

Tolerance mm : ± 0.10

Rated speed rpm : 100
CRT mm min. : > 19.00

Testing:

Rated speed rpm : 425
rack travel mm : 5.80
Tolerance mm : \pm 0.10

TORQUE CONTROL

Rated speed rpm : 1100
rack travel mm : 9.75
Tolerance mm : \pm 0.05

Rated speed rpm : 700
rack travel mm : 10.80
Tolerance mm : \pm 0.10

Start interlock

Rated speed rpm : > 100

Check
speed 1/min : > 80

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 112.5
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 110.0
Tolerance
cm³/1000 strokes : \pm 10.0
Check tolerance
cm³/1000S. : \pm 15.0

LOW IDLE

K04

Rated speed rpm : 425

Rack travel in mm : 5.80
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 28.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Speed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 11.08.97
Test oil : ISO 4113
Combination No. : 0 402 776 814
Injection pump
Pump designation : PES6P120A32OLS7285
EP type number : 0 412 726 892
Governor
Governor design. : RSV350...1000P4A564
Governor no. : 0 421 833 413
Cust. part No. : 1821048091

Customer-spec. information
Customer : NAVISTAR
Motor : DTA-531
Power KW : 224.0

TEST BENCH REQUIREMENTS

Inlet line : 2.4
Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 2 417 413 076
Inlet press. bar : 2.8
Tolerance bar : ± 0.1
Test nozzle holder
assembly : 1 688 901 101
Opening pressure
bar : 208.5
Tolerance bar : ± 1.5
Test lines : 1 680 750 008
Outside diameter : 6.0

K05

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : ± 1.0
Prestroke mm : 2.90
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10
Rack travel in mm : 10.50
Tolerance mm : ± 1.50
Firing order : 1- 5- 3- 6- 2-
: 4
Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75
Start of delivery blocking
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75
Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1000
Rack travel in mm : 12.85
Tolerance mm : ± 0.05
Del. quantity
cm³/1000 strokes : 201.0

Tolerance
cm3/1000 strokes : + 1.0

Check tolerance
cm3/1000S. : + 4.0

Speed

Tolerance
cm3/1000 strokes : 5.0

Check tolerance
cm3/1000S. : 9.0

Rated speed rpm : 350

Rack travel in mm : 5.90
Tolerance mm : + 0.10

Del. quantity
cm3/1000 strokes : 32.5

Tolerance
cm3/1000 strokes : + 3.0
Check tolerance
cm3/1000S. : + 5.0

Speed
Tolerance
cm3/1000 strokes : 8.0
Check tolerance
cm3/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : + 0.20

governor spring
pre-tension
click setting x : 5.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1000
Aneroid pressure
hPa : 1500
Del. quantity
cm3/1000 strokes : 201.0

K06

Tolerance
cm3/1000 strokes : + 1.0

Check tolerance
cm3/1000S. : + 4.0

Speed

Tolerance
cm3/1000 strokes : 5.0

Check tolerance
cm3/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 111.0
tolerance degree : + 4.0

RATED SPEED

rack travel mm : 11.80
Rated speed rpm : 1055
Tolerance 1/min : + 5

rack travel mm : 4.00
Rated speed rpm : 1105
Tolerance 1/min : + 5

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 1150

rack travel mm : 4.00
Rated speed rpm : 1110
Tolerance 1/min : + 5

LOW IDLE

control lever
position degree : 75.0
tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 100

CRT mm min. : > 19.00

Testing:

Rated speed rpm : 350
rack travel mm : 5.90
Tolerance mm : + 0.10

TORQUE CONTROL

Rated speed rpm : 1000

rack travel mm : 12.85
Tolerance mm : \pm 0.05

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 1000
Pressure hPa : 1500
rack travel mm : 12.85
Tolerance mm : \pm 0.05

Rated speed rpm : 1000
Pressure hPa :
rack travel mm : 7.90
Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 1000

Pressure hPa : 850
rack travel mm : 11.50
Tolerance mm : \pm 0.20

Pressure hPa : 350
rack travel mm : 8.95
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 87.5
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.00
Tolerance mm : \pm 1.00
Del. quantity
cm³/1000 strokes : 185.0
Tolerance
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000S. : \pm 25.0

LOW IDLE

Rated speed rpm : 350

Rack travel in mm : 5.90
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 32.5
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 5.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and
adjustment instructions.
See microcard(s) W400/...

Edition : 05.08.97
Test oil : ISO 4113

Combination No. : 0 402 746 635

Injection pump
Pump designation : PES6P120A72ORS7366
EP type number : 0 412 726 933

Governor
Governor design. : RQV275...1100PA1356K
Governor no. : 0 421 815 557

Cust. part No. :

Customer-spec. information

Customer : IVECO-FRANCE
Motor : 8460.41T.2036
Power KW : 185.0

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 076

Inlet press. bar : 2.5
Tolerance bar : ± 0.1

Overflow quantity
min. l/h : 160
Tolerance l/h : ± 10.0

Test nozzle holde
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 2.85
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 20.50
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance *NW : ± 0.75

Start of delivery mark

Check
tolerance *NW : ± 0.40

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 10.40
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 202.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Spread

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 275

Rack travel in mm : 6.20
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 19.0

Tolerance
cm³/1000 strokes : ± 3.0

Check tolerance
cm³/1000S. : ± 6.0

Spread

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1155
guide sleeve

travel mm : 9.76
Tolerance mm : ± 0.15

Rated speed rpm : 275
guide sleeve

travel mm : 1.70
Tolerance mm : ± 0.20

Rated speed rpm : 791
guide sleeve

travel mm : 6.42
Tolerance mm : ± 0.25

Rated speed rpm : 460
guide sleeve

travel mm : 3.77

Tolerance mm : ± 0.25

Rated speed rpm : 1440

guide sleeve

travel mm : 13.50

Tolerance mm : ± 0.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100

Aneroid pressure

hPa : 1200

Del. quantity

cm³/1000 strokes : 202.0

Tolerance

cm³/1000 strokes : ± 1.0

Check tolerance

cm³/1000S. : ± 4.0

Spread

Tolerance

cm³/1000 strokes : 5.0

Check tolerance

cm³/1000S. : 9.0

CONTROL LEVER

control lever

position degree : 116.0

tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 10.50

Rated speed rpm : 1145

Tolerance 1/min : ± 5

Check

speed 1/min : ± 10

rack travel mm : 4.00

Rated speed rpm : 1220

Tolerance 1/min : ± 15

Check

speed 1/min : ± 20

rack travel mm : 0.50

Tolerance mm : ± 0.50

Rated speed rpm : 1350

LOW IDLE

control lever

position degree : 75.0

tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 175
CRT mm min. : > 7.70

Testing:

Rated speed rpm : 275
rack travel mm : 6.20
Tolerance mm : \pm 0.10

Rated speed rpm : 315

TORQUE CONTROL

Rated speed rpm : 1100
rack travel mm : 10.40
Tolerance mm : \pm 0.05

Rated speed rpm : 800
rack travel mm : 11.30
Tolerance mm : \pm 0.15

Rated speed rpm : 600
rack travel mm : 11.70
Tolerance mm : \pm 0.10

Rated speed rpm : 300
rack travel mm : 12.50
Tolerance mm : \pm 0.50

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 600
Pressure hPa : 1200
rack travel mm : 11.70
Tolerance mm : \pm 0.10

Rated speed rpm : 600
Pressure hPa : -
rack travel mm : 9.40
Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 600

Pressure hPa : 280
rack travel mm : 10.10
Tolerance mm : \pm 0.20

Pressure hPa : 410
rack travel mm : 11.20
Tolerance mm : \pm 0.10

K10

Start interlock

Rated speed rpm : > 180
Rated speed rpm : < 220

Check
speed 1/min : > 160
Check
speed 1/min : < 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 216.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 145.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

STARTING FUEL DELIVERY

Set starting CRT at K-cam.

Rated speed rpm : 100
rack travel mm : 12.50
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 150.0
Tolerance
cm³/1000 strokes : \pm 15.0
Check tolerance
cm³/1000S. : \pm 19.0

LOW IDLE

Rated speed rpm : 275

Rack travel in mm : 6.20
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 19.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 06.08.97
Test oil : ISO 4113

Combination No. : 0 402 846 078

Injection pump
Pump designation : PE6P120A320RS8044
EP type number : 0 412 826 036

Governor
Governor design. : RQV300...1050PA1225
Governor no. : 0 421 814 151

Cust. part No. : 11031993
: -P02 v.03/97

Customer-spec. information
Customer : VCE
Motor : TD122KAE
Power KW : 245.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 078

Inlet press. bar : 2.5
Tolerance bar : ± 0.1

Overflow quantity
min. l/h : 160
Tolerance l/h : ± 20.0

Test nozzle holde
assembly : 1 688 901 103

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test Lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.50
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 11.00
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 11.60
Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 236.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Spread

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 11.0

Rated speed rpm : 325

Rack travel in mm : 3.60
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 23.0

Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 6.0

Spread

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1131
guide sleeve
travel mm : 8.61
Tolerance mm : \pm 0.15

Rated speed rpm : 325
guide sleeve
travel mm : 2.04
Tolerance mm : \pm 0.20

Rated speed rpm : 1038
guide sleeve
travel mm : 7.03
Tolerance mm : \pm 0.25

Rated speed rpm : 490
guide sleeve
travel mm : 4.65
Tolerance mm : \pm 0.25

Rated speed rpm : 1300
guide sleeve
travel mm : 11.50
Tolerance mm : \pm 0.50

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1190

Rack travel in mm : 10.60
Tolerance mm : \pm 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700
Aneroid pressure
hPa : 1500

Del. quantity
cm³/1000 strokes : 236.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Spread

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 11.0

CONTROL LEVER

control lever
position degree : 62.0
tolerance degree : \pm 4.0

control lever
position degree : 122.0
tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 10.60
Rated speed rpm : 1120
Tolerance 1/min : \pm 5

rack travel mm : 4.00
Rated speed rpm : 1180
Tolerance 1/min : \pm 15

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 1260

LOW IDLE

control lever
position degree : 64.0
tolerance degree : \pm 4.0

control lever
position degree : 14.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 225

CRT mm min. : $>$ 5.40

Testing:

Rated speed rpm : 325
rack travel mm : 3.60
Tolerance mm : \pm 0.10

Rated speed rpm : 375

TORQUE CONTROL

Rated speed rpm : 700
rack travel mm : 11.60
Tolerance mm : \pm 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1500
rack travel mm : 11.60
Tolerance mm : \pm 0.05

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 10.00
Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 520
rack travel mm : 1.30
Tolerance mm : \pm 0.20

Pressure hPa : 290
rack travel mm : 0.25
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 188.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 155.0
Tolerance
cm³/1000 strokes : \pm 15.0
Check tolerance
cm³/1000S. : \pm 19.0

LOW IDLE

Rated speed rpm : 325

Rack travel in mm : 3.60
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 23.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0

Speed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and
adjustment instructions.
See microcard(s) W400/...

Edition : 06.08.97
Test oil : ISO 4113

Combination No. : 0 402 846 079

Injection pump
Pump designation : PE6P120A320RS8044
EP type number : 0 412 826 036

Governor
Governor design. : RQV300...1050PA1141
Governor no. : 0 421 814 091

Cust. part No. : 11031994
: -P02 V.06.97

Customer-spec. information
Customer : VCE
Motor : TD122KFE
Power KW : 297.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 078

Inlet press. bar : 2.5
Tolerance bar : ± 0.1

Overflow quantity
min. l/h : 145
Tolerance l/h : ± 20.0

Test nozzle holde
assembly : 1 688 901 103

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.50
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 11.00
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 13.25
Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 298.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Speed

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 11.0

Rated speed rpm : 325

Rack travel in mm : 3.60
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 23.0

Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 6.0

Speed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1131

guide sleeve
travel mm : 8.63
Tolerance mm : \pm 0.15

Rated speed rpm : 325
guide sleeve
travel mm : 2.04
Tolerance mm : \pm 0.20

Rated speed rpm : 1038
guide sleeve
travel mm : 7.03
Tolerance mm : \pm 0.25

Rated speed rpm : 490
guide sleeve
travel mm : 4.65
Tolerance mm : \pm 0.25

Rated speed rpm : 1300
guide sleeve
travel mm : 11.50
Tolerance mm : \pm 0.50

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1190

Rack travel in mm : 12.20
Tolerance mm : \pm 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700
Aneroid pressure
hPa : 1500
Del. quantity
cm³/1000 strokes : 298.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 11.0

CONTROL LEVER

control lever
position degree : 64.0
tolerance degree : \pm 4.0

control lever
position degree : 122.0
tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 12.25
Rated speed rpm : 1120
Tolerance 1/min : + 5

rack travel mm : 4.00
Rated speed rpm : 1180
Tolerance 1/min : + 15

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 1260

LOW IDLE

control lever
position degree : 64.0
tolerance degree : + 4.0

control lever
position degree : 12.0
tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 225

CRT mm min. : > 6.00

Testing:

Rated speed rpm : 325
rack travel mm : 3.60
Tolerance mm : + 0.10

Rated speed rpm : 375

TORQUE CONTROL

Rated speed rpm : 700
rack travel mm : 13.25
Tolerance mm : + 0.05

Rated speed rpm : 700
rack travel mm : 12.55
Tolerance mm : + 0.15

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500

Pressure hPa : 1500
rack travel mm : 14.00
Tolerance mm : + 0.25

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 10.00
Tolerance mm : + 0.15

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 850
rack travel mm : 2.90
Tolerance mm : + 0.20

Pressure hPa : 300
rack travel mm : 0.25
Tolerance mm : + 0.05

Start interlock

Rated speed rpm : > 100
Rated speed rpm : > 230

Check
speed 1/min : > 80
Check
speed 1/min : > 250

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 269.0
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 4.0
Speed
Tolerance
cm³/1000 strokes : 10.0
Check tolerance
cm³/1000S. : 14.0

Aneroid pressure
hPa : -
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 188.0
Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : ± 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : ± 0.50
Del. quantity
cm³/1000 strokes : 165.0
Tolerance
cm³/1000 strokes : ± 15.0
Check tolerance
cm³/1000S. : ± 19.0

LOW IDLE

Rated speed rpm : 325
Rack travel in mm : 3.60
Tolerance mm : ± 0.10
Del. quantity
cm³/1000 strokes : 23.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0
Speed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 01.08.97
Test oil : ISO 4113

Combination No. : 0 403 486 106

Injection pump
Pump designation : PES6MW100/321RS1232
EP type number : 0 413 406 226

Governor
Governor design. : RSV300...1150MWOA343
: -2
Governor no. : 0 420 085 210

Cust. part No. : 3-7262

Customer-spec. information
Customer : MAN
Motor : D0826LE 523
Power KW : 169.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 1.5

Test nozzle holder
assembly : 0 681 343 009

Opening pressure
bar : 173.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

K20

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 3.55
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 925

Rack travel in mm : 13.50
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 165.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Speed

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 7.5

Rated speed rpm : 365

Rack travel in mm : 4.50

Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 14.0

Tolerance
cm³/1000 strokes : ± 2.0

Check tolerance
cm³/1000S. : ± 4.5

Speed
Tolerance

cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 5.5

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.65
Tolerance mm : ± 0.35

governor spring
pre-tension
click setting x : 5.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 925
Aneroid pressure
hPa : 1200
Del. quantity
cm³/1000 strokes : 165.0
Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0
Speed
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 7.5

CONTROL LEVER

control lever
position degree : 103.0
tolerance degree : ± 4.0

RATED SPEED
rack travel mm : 12.15
Rated speed rpm : 1180
Tolerance 1/min : ± 5

rack travel mm : 4.00
Rated speed rpm : 1230
Tolerance 1/min : ± 15

rack travel mm : 1.00
Tolerance mm : ± 0.70
Rated speed rpm : 1400

LOW IDLE

control lever
position degree : 78.0
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 100

CRT mm min. : > 19.00

Testing:

Rated speed rpm : 365
rack travel mm : 4.50
Tolerance mm : ± 0.10

rack travel mm : 2.00
Rated speed rpm : 420
Tolerance 1/min : ± 30

TORQUE CONTROL

Rated speed rpm : 925
rack travel mm : 13.50
Tolerance mm : ± 0.05

Rated speed rpm : 1125
rack travel mm : 13.15
Tolerance mm : \pm 0.05

Rated speed rpm : 600
rack travel mm : 13.50
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1200
rack travel mm : 13.50
Tolerance mm : \pm 0.10

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 9.45
Tolerance mm : \pm 0.05

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 750
rack travel mm : 12.35
Tolerance mm : \pm 0.15

Pressure hPa : 150
rack travel mm : 9.75
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 1125
Del. quantity
cm³/1000 strokes : 163.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 5.0
Spreed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 9.0

Aneroid pressure
hPa : 1200
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 163.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 5.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 76.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 3.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 145.0
Tolerance
cm³/1000 strokes : \pm 5.0
Check tolerance
cm³/1000S. : \pm 8.0

LOW IDLE

Rated speed rpm : 365

Rack travel in mm : 4.50
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 14.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Spreed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 5.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 07.08.97
Test oil : ISO 4113
Combination No. : 0 401 846 843
Injection pump
Pump designation : PE6P120A720RS3069
EP type number : 0 411 826 712
Governor
Governor design. : RQV300...1000PA501
: -4
Governor no. : 0 421 813 609
Cust. part No. :

Customer-spec. information
Customer : IVECO-FIAT
Motor : 8210.22.371

TEST BENCH REQUIREMENTS

Inlet line : 4.2
Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1 417 413 025
Inlet press. bar : 1.5
Tolerance bar : ± 0.1
Test nozzle holder
assembly : 1 688 901 019
Opening pressure
bar : 208.5
Tolerance bar : ± 1.5
Test lines : 1 680 750 075
Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0
Prestroke mm : 3.55
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10
Rack travel in mm : 10.50
Tolerance mm : ± 1.50
Firing order : 1- 5- 3- 6- 2-
: 4
Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1000
Rack travel in mm : 12.55
Tolerance mm : ± 0.05
Del. quantity
cm³/1000 strokes : 206.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000s. : ± 4.0
Speed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 300

Rack travel in mm : 6.20

Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 20.0

Tolerance
cm³/1000 strokes : ± 3.0

Check tolerance
cm³/1000S. : ± 6.0

Spread
Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1000
guide sleeve
travel mm : 8.10
Tolerance mm : ± 0.15

Rated speed rpm : 325
guide sleeve
travel mm : 1.70
Tolerance mm : ± 0.20

Rated speed rpm : 450
guide sleeve
travel mm : 3.10
Tolerance mm : ± 0.20

Rated speed rpm : 800
guide sleeve
travel mm : 5.90
Tolerance mm : ± 0.20

Rated speed rpm : 1300
guide sleeve
travel mm : 11.50
Tolerance mm : ± 0.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1000

Aneroid pressure
hPa : 700
Del. quantity
cm³/1000 strokes : 206.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0
Spread
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 120.0
tolerance degree : ± 4.0

RATED SPEED
rack travel mm : 11.50
Rated speed rpm : 1045
Tolerance 1/min : ± 5
Check
speed 1/min : ± 10

rack travel mm : 4.00
Rated speed rpm : 1145
Tolerance 1/min : ± 15
Check
speed 1/min : ± 20

rack travel mm : 0.50
Tolerance mm : ± 0.50
Rated speed rpm : 1250

LOW IDLE

control lever
position degree : 67.0
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 100
CRT mm min. : > 7.70

Testing:

Rated speed rpm : 300
rack travel mm : 6.20
Tolerance mm : ± 0.10

Rated speed rpm : 370

TORQUE CONTROL

Rated speed rpm : 1000
rack travel mm : 12.55
Tolerance mm : \pm 0.05

Rated speed rpm : 500
rack travel mm : 12.60
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 700
rack travel mm : 12.55
Tolerance mm : \pm 0.05

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 9.80
Tolerance mm : \pm 0.10

MEASUREMENT

Rated speed rpm : 500
Pressure hPa : 230
rack travel mm : 10.85
Tolerance mm : \pm 0.15

Pressure hPa : 280
rack travel mm : 11.85
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 700
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 218.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0

Aneroid pressure
hPa : -

K25

Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 132.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 200.0
Tolerance
cm³/1000 strokes : \pm 15.0
Check tolerance
cm³/1000S. : \pm 19.0

LOW IDLE

Rated speed rpm : 300
Rack travel in mm : 6.20
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 20.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 23.01.96
Test oil : ISO 4113

Combination No. : 0 401 846 882D

Injection pump
Pump designation : PE6P120A32ORS3206-1
EP type number : 0 411 826 775

Governor
Governor design. : RQ750PA783-1
Governor no. : 0 421 801 432

Cust. part No. : 865037 P03 V. 02/95

Customer-spec. information
Customer : PENTA
Motor : TAMD 122

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Vibration
damper
(RoBo diaphragm) : 4.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 457 413 010

Inlet press. bar : 1.5

Test nozzle holder
assembly : 1 688 901 019

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 075

K26

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 3.50
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 13.80
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 345.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : + 4.0

Spread

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 300
Del. quantity
cm³/1000 strokes : 20.0
Tolerance
cm³/1000 strokes : + 3.0
Check tolerance
cm³/1000S. : + 6.0
Spread
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 759
guide sleeve
travel mm : 6.78
Tolerance mm : + 0.15

Rated speed rpm : 510
guide sleeve
travel mm : -6.60
Tolerance mm : + 0.25

Rated speed rpm : 840
guide sleeve
travel mm : 16.84
Tolerance mm : + 0.25

Rated speed rpm : 790
guide sleeve
travel mm : 10.00
Tolerance mm : + 0.25

Rated speed rpm : 850
guide sleeve
travel mm : 11.50
Tolerance mm : + 0.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700
Aneroid pressure
hPa : -
Del. quantity
cm³/1000 strokes : 345.0
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 4.0
Spread
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 94.0
tolerance degree : + 4.0

RATED SPEED

rack travel mm : 12.80
Rated speed rpm : 825
Tolerance 1/min : + 3

rack travel mm : 4.00
Rated speed rpm : 835
Tolerance 1/min : + 15

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 950

ASSEMBLY GOVERNOR SETTING

Rated speed rpm : 822
rack travel mm : 12.80

Rated speed rpm : 880
Tolerance 1/min : + 5
rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 950

Rated speed rpm : 823
rack travel mm : 12.80

Rated speed rpm : 881
Tolerance 1/min : + 5
rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 950

Rated speed rpm : 824
rack travel mm : 12.80

Rated speed rpm : 882
Tolerance 1/min : \pm 5
rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 950

Rated speed rpm : 825
rack travel mm : 12.80

Rated speed rpm : 883
Tolerance 1/min : \pm 5
rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 950

Rated speed rpm : 826
rack travel mm : 12.80

Rated speed rpm : 884
Tolerance 1/min : \pm 5
rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 950

Rated speed rpm : 827
rack travel mm : 12.80

Rated speed rpm : 885
Tolerance 1/min : \pm 5
rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 950

TORQUE CONTROL

Rated speed rpm : 700
rack travel mm : 13.80
Tolerance mm : \pm 0.05

LOW IDLE

Rated speed rpm : 300
Del. quantity
cm³/1000 strokes : 20.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000s. : \pm 6.0
Speed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000s. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks:

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 07.08.97
Test oil : ISO 4113
Combination No. : 0 401 849 760
Injection pump
Pump designation : PE10P120A520/4LS3869
EP type number : 0 411 829 713

Governor
Goverrier design. : RQV250...900PA1198
Governor no. : 0 421 814 117

Cust. part No. :

Customer-spec. information
Customer : DHI
Motor : D2840LE
Power KW : 340.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 1.5

Overflow quantity
min. l/h : 130
Tolerance l/h : ± 20.0

Test nozzle holde
assembly : 1 688 901 019

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.25
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 10- 9- 4- 1- 8
 : - 7- 6- 3- 5
 : - 2

Phasing : 0-45-72-117-144
 : -189-216-261-288
 : -333

Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 10

BASIC SETTING

Rated speed rpm : 650

Rack travel in mm : 11.40
Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 196.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Speed

Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 10.0

Rated speed rpm : 250

Rack travel in mm : 6.90
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 25.0

Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 6.0

Speed

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 969
guide sleeve
travel mm : 8.42
Tolerance mm : \pm 0.15

Rated speed rpm : 250
guide sleeve
travel mm : 1.04
Tolerance mm : \pm 0.20

Rated speed rpm : 750
guide sleeve
travel mm : 6.57
Tolerance mm : \pm 0.25

Rated speed rpm : 1240
guide sleeve
travel mm : 11.50
Tolerance mm : \pm 0.50

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1065

Rack travel in mm : 10.40
Tolerance mm : \pm 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 650
Aneroid pressure
hPa : -
Del. quantity
cm³/1000 strokes : 196.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0
Speed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 10.0

CONTROL LEVER

control lever
position degree : 63.0
tolerance degree : \pm 4.0

control lever
position degree : 118.0
tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 10.40
Rated speed rpm : 945
Tolerance 1/min : \pm 5

rack travel mm : 4.00
Rated speed rpm : 1060
Tolerance 1/min : \pm 15

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 1150

LOW IDLE

control lever
position degree : 68.0
tolerance degree : \pm 4.0

control lever
position degree : 13.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 150

CRT mm min. : $>$ 8.10

Testing:

Rated speed rpm : 250
rack travel mm : 6.90
Tolerance mm : \pm 0.10

Rated speed rpm : 330

TORQUE CONTROL

Rated speed rpm : 650
rack travel mm : 11.40
Tolerance mm : \pm 0.05

Rated speed rpm : 900
rack travel mm : 11.40
Tolerance mm : \pm 0.10

Start interlock

Rated speed rpm : $>$ 100
Rated speed rpm : $<$ 170

Check
speed 1/min : $>$ 80
Check
speed 1/min : $<$ 190

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 900
Del. quantity
cm³/1000 strokes : 200.0

L03

Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 310.0
Tolerance
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000S. : \pm 24.0

LOW IDLE

Rated speed rpm : 250

Rack travel in mm : 6.90
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 25.0

Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0

Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 07.08.97
Test oil : ISO 4113
Combination No. : 0 402 046 350
Injection pump
Pump designation : PES6P110A720RS531
EP type number : 0 412 016 076
Governor
Governor design. : RGV300...1100PA1016
: -7
Governor no. : 0 421 813 972
Cust. part No. :

Customer-spec. information
Customer : IVECO-UNIC
Motor : 8361.25.510

TEST BENCH REQUIREMENTS

Inlet line : 4.2
Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1 417 413 025
Inlet press. bar : 1.5
Test nozzle holder
assembly : 0 681 343 009
Opening pressure
bar : 173.5
Tolerance bar : ± 1.5
Test lines : 1 680 750 089
Outside diameter : 8.0

L04

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0
Prestroke mm : 2.05
Tolerance mm : ± 0.50
Check
tolerance mm : ± 0.10
Rack travel in mm : 10.50
Tolerance mm : ± 1.50
Firing order : 1- 5- 3- 6- 2-
: 4
Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1100
Rack travel in mm : 10.35
Tolerance mm : ± 0.05
Del. quantity
cm³/1000 strokes : 121.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 3.5
Speed

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 7.5

Rated speed rpm : 300

Rack travel in mm : 6.20
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 15.5

Tolerance
cm³/1000 strokes : ± 2.5

Check tolerance
cm³/1000S. : ± 5.0

Speed
Tolerance
cm³/1000 strokes : 4.5

Check tolerance
cm³/1000S. : 7.5

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 750
guide sleeve
travel mm : 4.70
Tolerance mm : ± 0.20

Rated speed rpm : 1145
guide sleeve
travel mm : 8.40
Tolerance mm : ± 0.10

Rated speed rpm : 300
guide sleeve
travel mm : 1.00
Tolerance mm : ± 0.20

Rated speed rpm : 500
guide sleeve
travel mm : 2.80
Tolerance mm : ± 0.30

Rated speed rpm : 1350
guide sleeve
travel mm : 11.50
Tolerance mm : ± 0.50

GUIDE SLEEVE POSITION

L05

control lever
position degree : - 1
Rated speed rpm : 1240

Rack travel in mm : 9.30
Tolerance mm : ± 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100
Aneroid pressure
hPa : 700

Del. quantity
cm³/1000 strokes : 121.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 3.5

Speed
Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 7.5

CONTROL LEVER

control lever
position degree : 121.0
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 9.30
Rated speed rpm : 1145

Tolerance 1/min : ± 5
Check

speed 1/min : ± 10

rack travel mm : 4.00
Rated speed rpm : 1220

Tolerance 1/min : ± 15
Check

speed 1/min : ± 20

rack travel mm : 0.50
Tolerance mm : ± 0.50

Rated speed rpm : 1350

rack travel mm : 4.00

LOW IDLE

control lever
position degree : 67.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 100
CRT mm min. : $>$ 7.70

Testing:

Rated speed rpm : 300
rack travel mm : 6.20
Tolerance mm : \pm 0.10

Rated speed rpm : 430

TORQUE CONTROL

Rated speed rpm : 1100
rack travel mm : 10.35
Tolerance mm : \pm 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 700
rack travel mm : 10.35
Tolerance mm : \pm 0.05

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 9.05
Tolerance mm : \pm 0.15

MEASUREMENT

Rated speed rpm : 500
Pressure hPa : 430
rack travel mm : 9.50
Tolerance mm : \pm 0.10

Pressure hPa : 465
rack travel mm : 9.95
Tolerance mm : \pm 0.05

Start interlock

Rated speed rpm : $>$ 100

Check
speed 1/min : $>$ 80

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 1100
Del. quantity
cm³/1000 strokes : 97.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 3.5

STARTING FUEL DELIVERY

ESS test: With 24 V solenoid activated,
rack must reach start position in max.
control lever setting.

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 230.0
Tolerance
cm³/1000 strokes : \pm 15.0
Check tolerance
cm³/1000S. : \pm 19.0

LOW IDLE

Rated speed rpm : 300
Rack travel in mm : 6.20
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 15.5
Tolerance
cm³/1000 strokes : \pm 2.5
Check tolerance
cm³/1000S. : \pm 5.0
Speed
Tolerance
cm³/1000 strokes : 4.5
Check tolerance
cm³/1000S. : 7.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 03.07.97
Test oil : ISO 4113

Combination No. : 0 402 076 801

Injection pump
Pump designation : PES6P120A1320/5RS337
: 2Y
EP type number : 0 412 026 793

Governor
Governor design. : RSV350...1050P1A641
Governor no. : 0 421 833 553

Cust. part No. : 1382923

Customer-spec. information
Customer : SCANIA
Motor : DSI1172A,-C1157A

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Vibration
damper
(RoBo diaphragm) : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 2.5
Tolerance bar : ± 0.1

Test nozzle holde
assembly : 1 688 901 104

Opening pressure
bar : 251.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.45
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2
: - 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.10
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 16.75
Tolerance mm : + 0.05

Del. quantity
cm³/1000 strokes : 263.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 4.0

Speed

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

Rack travel in mm : 6.00
Tolerance mm : + 0.20

Del. quantity
cm³/1000 strokes : 20.0

Tolerance
cm³/1000 strokes : + 4.0

Check tolerance
cm³/1000S. : + 6.0

Speed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : + 0.20

governor spring
pre-tension
click setting x : 2.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700

Aneroid pressure
hPa : 1500

Del. quantity
cm³/1000 strokes : 263.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 4.0

Speed

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

CONTROL LEVER

control lever
position degree : 33.0
tolerance degree : + 4.0

control lever
position degree : 85.0
tolerance degree : + 4.0

ASSEMBLY GOVERNOR SETTING

Rated speed rpm : 750
rack travel mm : 15.70

Rated speed rpm : 788
Tolerance 1/min : + 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : + 0.55
Rated speed rpm : 850

Rated speed rpm : 751
rack travel mm : 15.70

Rated speed rpm : 789
Tolerance 1/min : + 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : + 0.55
Rated speed rpm : 850

Rated speed rpm : 752
rack travel mm : 15.70

Rated speed rpm : 790
Tolerance 1/min : + 4

rack travel mm : 4.00
rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 850

Rated speed rpm : 753
rack travel mm : 15.70

Rated speed rpm : 791
Tolerance 1/min : \pm 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 850

Rated speed rpm : 754
rack travel mm : 15.70

Rated speed rpm : 792
Tolerance 1/min : \pm 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 850

Rated speed rpm : 755
rack travel mm : 15.70

Rated speed rpm : 793
Tolerance 1/min : \pm 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 850

TORQUE CONTROL

Rated speed rpm : 700
rack travel mm : 16.75
Tolerance mm : \pm 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1500
rack travel mm : 16.75
Tolerance mm : \pm 0.05

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 13.50
Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 500
Pressure hPa : 295
rack travel mm : 14.30
Tolerance mm : \pm 0.20
Pressure hPa : 640
rack travel mm : 16.00
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 188.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 13.50
Tolerance mm : \pm 0.20
Del. quantity
cm³/1000 strokes : 140.0
Tolerance
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000S. : \pm 24.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 21.04.97

Test oil : ISO 4113

Combination No. : 0 402 076 802

Injection pump
Pump designation : PES6P120A1320/5RS337
: 3

EP type number : 0 412 026 794

Governor
Governor design. : RSV350...1050P8A643
Governor no. : 0 421 833 555

Cust. part No. : 1385930

Customer-spec. information
Customer : SCANIA
Motor : DSI1171A,-C1156A

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Vibration
damper
(RoBo diaphragm) : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 2.5
Tolerance bar : ± 0.1

Test nozzle holde
assembly : 1 688 901 104

Opening pressure
bar : 251.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.45
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 15.35
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 226.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 7.0

Speed

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

Rated speed rpm : 350

Rack travel in mm : 5.10
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 18.0

Tolerance
cm³/1000 strokes : ± 3.0

Check tolerance
cm³/1000S. : ± 6.0

Speed

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : ± 0.20

governor spring
pre-tension
click setting x : 6.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700

Aneroid pressure
hPa : 1500

Del. quantity
cm³/1000 strokes : 226.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 7.0

Speed

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

CONTROL LEVER

control lever
position degree : 54.0
tolerance degree : ± 4.0

control lever
position degree : 104.0
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 14.30
Rated speed rpm : 1095

Tolerance 1/min : ± 5
Check

speed 1/min : ± 10

rack travel mm : 4.00
Rated speed rpm : 1195

Tolerance 1/min : ± 15
Check

speed 1/min : ± 20

rack travel mm : 0.85
Tolerance mm : ± 0.55

Rated speed rpm : 1350

rack travel mm : 4.00
Rated speed rpm : 1215

Tolerance 1/min : ± 15
Check

speed 1/min : ± 20

LOW IDLE

control lever
position degree : 73.0
tolerance degree : \pm 4.0

control lever
position degree : 23.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 350
rack travel mm : 4.60
Tolerance mm : \pm 0.10

Testing:

Rated speed rpm : 350
rack travel mm : 5.10
Tolerance mm : \pm 0.10

rack travel mm : 2.00
Rated speed rpm : 555
Tolerance 1/min : \pm 30

TORQUE CONTROL

Rated speed rpm : 700
rack travel mm : 15.35
Tolerance mm : \pm 0.05

Rated speed rpm : 1050
rack travel mm : 15.35
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1500
rack travel mm : 15.35
Tolerance mm : \pm 0.05

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 12.10
Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 500
Pressure hPa : 510
rack travel mm : 13.10
Tolerance mm : \pm 0.20

Pressure hPa : 780
rack travel mm : 14.50
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1500
Rated speed rpm : 1050
Del. quantity
cm³/1000 strokes : 209.0
Tolerance
cm³/1000 strokes : \pm 4.0
Check tolerance
cm³/1000S. : \pm 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 150.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 12.10
Tolerance mm : \pm 0.20
Del. quantity
cm³/1000 strokes : 165.0
Tolerance
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000S. : \pm 24.0

LOW IDLE

Rated speed rpm : 350
Rack travel in mm : 5.10
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 18.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Speed

Tolerance
cm3/1000 strokes : 4.0
Check tolerance
cm3/1000s. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 08.08.97
Test oil : ISO 4113

Combination No. : 0 402 086 702

Injection pump
Pump designation : PES6P100B321RS3388
EP type number : 0 412 006 714

Governor
Governor design. : RSV400...1125FCA674
Governor no. : 0 421 833 592

Cust. part No. : 51.11103-7564

Customer-spec. information

Customer : MAN
Motor : D0826 LE531
Power KW : 191.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 2.0
Tolerance bar : ± 0.1

Overflow quantity
min. l/h : 150
Tolerance l/h : ± 10.0

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 3.30
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 13.50
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery blocking

Tolerance : ± 0.10
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 925

Rack travel in mm : 14.10
Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 174.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Spread

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 6.0

Rated speed rpm : 400

Rack travel in mm : 4.90
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 25.0

Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 6.0

Spread

Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 5.5

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : \pm 0.20

governor spring
pre-tension
click setting x : 5.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 925

Aneroid pressure
hPa : 1500

Del. quantity
cm³/1000 strokes : 174.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Spread

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 6.0

CONTROL LEVER

control lever
position degree : 104.0
tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 12.60

Rated speed rpm : 1175

Tolerance 1/min : \pm 5

rack travel mm : 4.00

Rated speed rpm : 1265

Tolerance 1/min : \pm 15

rack travel mm : 0.85

Tolerance mm : \pm 0.55

Rated speed rpm : 1400

rack travel mm : 4.00

Rated speed rpm : 1270

Tolerance 1/min : \pm 15

LOW IDLE

control lever
position degree : 80.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 400

rack travel mm : 4.40

Tolerance mm : \pm 0.10

Testing:

Rated speed rpm : 400
rack travel mm : 4.90
Tolerance mm : \pm 0.10

rack travel mm : 2.00
Rated speed rpm : 500
Tolerance 1/min : \pm 30

TORQUE CONTROL

Rated speed rpm : 925
rack travel mm : 14.10
Tolerance mm : \pm 0.05

Rated speed rpm : 1125
rack travel mm : 13.60
Tolerance mm : \pm 0.05

Rated speed rpm : 700
rack travel mm : 14.15
Tolerance mm : \pm 0.10

Rated speed rpm : 1025
rack travel mm : 13.95
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1500
rack travel mm : 14.10
Tolerance mm : \pm 0.15

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 9.70
Tolerance mm : \pm 0.10

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 150
rack travel mm : 10.00
Tolerance mm : \pm 0.05

Pressure hPa : 800
rack travel mm : 13.30
Tolerance mm : \pm 0.15

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1500
Rated speed rpm : 1125
Del. quantity
cm³/1000 strokes : 161.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0

Aneroid pressure
hPa : 1500
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 187.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 91.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 9.70
Tolerance mm : \pm 0.20
Del. quantity
cm³/1000 strokes : 112.0
Tolerance
cm³/1000 strokes : \pm 10.0
Check tolerance
cm³/1000S. : \pm 14.0

LOW IDLE

Rated speed rpm : 400
Rack travel in mm : 4.90
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 25.0

Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0
Speed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 5.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 12.08.97
Test oil : ISO 4113

Combination No. : 0 402 736 889

Injection pump
Pump designation : PES6P120A120RS7390
EP type number : 0 412 726 945

Governor
Governor design. : RQV350...1100PA1244K
Governor no. : 0 421 815 477

Cust. part No. : 3283279

Customer-spec. information
Customer : CUMMINS
Motor : 6CTAA
Power KW : 179.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 1.5

Overflow quantity
min. l/h : 90
Tolerance l/h : ± 10.0

Test nozzle holde
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 3.30
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 20.50
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery blocking

*NW after s.o.d. : 7.70
Tolerance : ± 0.10
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 13.70
Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 173.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Speed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 350

Rack travel in mm : 4.60
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 18.0

Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 5.0

Speed

Tolerance
cm³/1000 strokes : 7.0

Check tolerance
cm³/1000S. : 11.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1159
guide sleeve
travel mm : 10.27
Tolerance mm : \pm 0.15

Rated speed rpm : 350
guide sleeve
travel mm : 1.93
Tolerance mm : \pm 0.20

Rated speed rpm : 710
guide sleeve
travel mm : 5.79
Tolerance mm : \pm 0.25

Rated speed rpm : 420
guide sleeve
travel mm : 4.28
Tolerance mm : \pm 0.25

Rated speed rpm : 1380
guide sleeve
travel mm : 13.50
Tolerance mm : \pm 0.50

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1195

Rack travel in mm : 12.00
Tolerance mm : \pm 2.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100
Aneroid pressure
hPa : 1500
Del. quantity
cm³/1000 strokes : 173.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0
Speed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 68.0
tolerance degree : \pm 4.0

control lever
position degree : 122.0
tolerance degree : \pm 4.0

RATED SPEED
rack travel mm : 12.70
Rated speed rpm : 1145
Tolerance 1/min : \pm 5

rack travel mm : 4.00
Rated speed rpm : 1240
Tolerance 1/min : \pm 15

Check
speed 1/min : \pm 20
rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 1350

LOW IDLE

control lever
position degree : 74.0
tolerance degree : \pm 4.0

control lever
position degree : 20.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 250
CRT mm min. : $>$ 7.50

Testing:

Rated speed rpm : 350
rack travel mm : 4.60
Tolerance mm : \pm 0.10

Rated speed rpm : 350

TORQUE CONTROL

Rated speed rpm : 1100
rack travel mm : 13.70
Tolerance mm : \pm 0.05

Rated speed rpm : 700
rack travel mm : 13.85
Tolerance mm : \pm 0.10

Rated speed rpm : 500
rack travel mm : 12.95
Tolerance mm : \pm 0.15

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 700
Pressure hPa : 1500
rack travel mm : 13.85
Tolerance mm : \pm 0.10

L20

Rated speed rpm : 700
Pressure hPa : -
rack travel mm : 10.40
Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 700
Pressure hPa : 400
rack travel mm : 11.70
Tolerance mm : \pm 0.20

Pressure hPa : 600
rack travel mm : 13.30
Tolerance mm : \pm 0.05

Start interlock

Rated speed rpm : $>$ 100
Rated speed rpm : $<$ 290

Check
speed 1/min : $>$ 80
Check
speed 1/min : $<$ 300

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1500
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 171.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000s. : \pm 6.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000s. : 12.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 104.5
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000s. : \pm 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 190.0
Tolerance
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000s. : \pm 24.0

LOW IDLE

Rated speed rpm : 350

Rack travel in mm : 4.60
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 18.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000s. : \pm 5.0
Spreed
Tolerance
cm³/1000 strokes : 7.0
Check tolerance
cm³/1000s. : 11.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 07.08.97
Test oil : ISO 4113

Combination No. : 0 402 846 060

Injection pump
Pump designation : PE6P120A32ORS8015
EP type number : 0 412 826 016

Governor
Governor design. : RQV300...1050PA1141
Governor no. : 0 421 814 091

Cust. part No. : 11031819
: -P03 V. 2.95

Customer-spec. information
Customer : VCE
Motor : TD122KFE-P5880
Power KW : 296.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 078

Inlet press. bar : 2.5
Tolerance bar : ± 0.1

Test nozzle holde
assembly : 1 688 901 103

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test Lines : 1 680 750 008

Outside diameter : 6.0
x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.00
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 11.30
Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 298.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Speed

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 11.0

Rated speed rpm : 325

Rack travel in mm : 3.80
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 23.0

Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 6.0

Speed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1121

guide sleeve
travel mm : 8.44
Tolerance mm : \pm 0.15

Rated speed rpm : 325

guide sleeve
travel mm : 2.04

L23

Tolerance mm : \pm 0.20

Rated speed rpm : 1035
guide sleeve
travel mm : 6.98
Tolerance mm : \pm 0.25

Rated speed rpm : 490
guide sleeve
travel mm : 4.65
Tolerance mm : \pm 0.25

Rated speed rpm : 1300
guide sleeve
travel mm : 11.50
Tolerance mm : \pm 0.50

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1190

Rack travel in mm : 9.50
Tolerance mm : \pm 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700
Aneroid pressure
hPa : 1500

Del. quantity
cm³/1000 strokes : 298.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Speed

Tolerance
cm³/1000 strokes : 3.0

Check tolerance
cm³/1000S. : 11.0

CONTROL LEVER

control lever
position degree : 62.0
tolerance degree : \pm 4.0

control lever
position degree : 122.0
tolerance degree : \pm 4.0

RATED SPEED
rack travel mm : 10.30

Rated speed rpm : 1110
 Tolerance 1/min : + 5
 rack travel mm : 4.00
 Rated speed rpm : 1160
 Tolerance 1/min : + 15
 rack travel mm : 0.50
 Tolerance mm : + 0.50
 Rated speed rpm : 1260

LOW IDLE

control lever
 position degree : 64.0
 tolerance degree : + 4.0

control lever
 position degree : 12.0
 tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 225
 CRT mm min. : > 5.40

Testing:

Rated speed rpm : 325
 rack travel mm : 3.80
 Tolerance mm : + 0.10

Rated speed rpm : 375

TORQUE CONTROL

Rated speed rpm : 700
 rack travel mm : 11.30
 Tolerance mm : + 0.05

Rated speed rpm : 700
 rack travel mm : 10.45
 Tolerance mm : + 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
 Pressure hPa : 1500
 rack travel mm : 12.25
 Tolerance mm : + 0.25

Rated speed rpm : 500
 Pressure hPa : -
 rack travel mm : 7.80
 Tolerance mm : + 0.10

MEASUREMENT

Rated speed rpm : 500
 Pressure hPa : 850
 rack travel mm : 3.00
 Tolerance mm : + 0.20

Pressure hPa : 300
 rack travel mm : 0.25
 Tolerance mm : + 0.05

Start interlock

Rated speed rpm : > 100
 Rated speed rpm : > 230

Check
 speed 1/min : > 80
 Check
 speed 1/min : > 250

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
 hPa : -
 Rated speed rpm : 700
 Del. quantity
 cm3/1000 strokes : 269.0
 Tolerance
 cm3/1000 strokes : + 1.0
 Check tolerance
 cm3/1000S. : + 4.0
 Spreed
 Tolerance
 cm3/1000 strokes : 10.0
 Check tolerance
 cm3/1000S. : 14.0

Aneroid pressure
 hPa : -
 Rated speed rpm : 700
 Del. quantity
 cm3/1000 strokes : 188.0
 Tolerance
 cm3/1000 strokes : + 1.0
 Check tolerance
 cm3/1000S. : + 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 150.0
Tolerance
cm³/1000 strokes : \pm 15.0
Check tolerance
cm³/1000S. : \pm 19.0

LOW IDLE

Rated speed rpm : 325
Rack travel in mm : 3.80
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 23.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Spreed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 07.08.97
Test oil : ISO 4113

Combination No. : 0 402 846 067

Injection pump
Pump designation : PE6P120A32ORS8015
EP type number : 0 412 826 016

Governor
Governor design. : RQV300...1050PA1225
Governor no. : 0 421 814 151

Cust. part No. : 11031773
: -P03 v.05/96

Customer-spec. information
Customer : VCE
Motor : TD122KAE
Power KW : 243.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 078

Inlet press. bar : 2.5
Tolerance bar : ± 0.1

Overflow quantity
min. l/h : 138
Tolerance l/h : ± 20.0

Test nozzle holder
assembly : 1 688 901 103

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.00
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 11.00
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 9.30
Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 236.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Spread

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 11.0

Rated speed rpm : 325

Rack travel in mm : 3.80
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 23.0

Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 6.0

Spread

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1131
guide sleeve
travel mm : 8.61
Tolerance mm : \pm 0.15

Rated speed rpm : 325
guide sleeve
travel mm : 2.04
Tolerance mm : \pm 0.20

Rated speed rpm : 1038
guide sleeve
travel mm : 7.03
Tolerance mm : \pm 0.25

Rated speed rpm : 490
guide sleeve
travel mm : 4.65
Tolerance mm : \pm 0.25

Rated speed rpm : 1300
guide sleeve
travel mm : 11.50
Tolerance mm : \pm 0.50

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1190

Rack travel in mm : 9.50
Tolerance mm : \pm 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700
Aneroid pressure
hPa : 1500
Del. quantity
cm³/1000 strokes : 236.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0
Spread
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 11.0

CONTROL LEVER

control lever
position degree : 61.0
tolerance degree : \pm 4.0

control lever
position degree : 122.0
tolerance degree : \pm 4.0

RATED SPEED
rack travel mm : 8.30
Rated speed rpm : 1120
Tolerance 1/min : \pm 5

rack travel mm : 4.00
Rated speed rpm : 1170
Tolerance 1/min : \pm 15

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 1260

LOW IDLE

control lever
position degree : 64.0
tolerance degree : \pm 4.0

control lever
position degree : 10.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 225

CRT mm min. : $>$ 5.40

Testing:

Rated speed rpm : 325
rack travel mm : 3.80
Tolerance mm : \pm 0.10

Rated speed rpm : 375

TORQUE CONTROL

Rated speed rpm : 700
rack travel mm : 9.30
Tolerance mm : \pm 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1500
rack travel mm : 9.30
Tolerance mm : \pm 0.05

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 7.80
Tolerance mm : \pm 0.10

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 520
rack travel mm : 1.30
Tolerance mm : \pm 0.20

Pressure hPa : 290
rack travel mm : 0.25
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 188.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 150.0
Tolerance
cm³/1000 strokes : \pm 15.0
Check tolerance
cm³/1000S. : \pm 19.0

LOW IDLE

Rated speed rpm : 325

Rack travel in mm : 3.80
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 23.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0

Speed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 11.08.97
Test oil : ISO 4113
Combination No. : 0 402 846 082
Injection pump
Pump designation : PE6P120A320RS8051
EP type number : 0 412 826 037
Governor
Governor design. : RQV300...1050PA1225
Governor no. : 0 421 814 151

Cust. part No. : 11127056
: -P02 v.08/97

Customer-spec. information
Customer : VCE
Motor : TD122KME
Power KW : 245.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1
Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 2 417 413 078
Inlet press. bar : 2.5
Tolerance bar : ± 0.1
Tolerance l/h : ± 20.0
Test nozzle holde
assembly : 1 688 901 103
Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.50
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 11.00
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 12.10
Tolerance mm : + 0.05

Del. quantity
cm³/1000 strokes : 258.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 4.0

Speed

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 11.0

Rated speed rpm : 325

Rack travel in mm : 3.60
Tolerance mm : + 0.10

Del. quantity
cm³/1000 strokes : 23.0

Tolerance
cm³/1000 strokes : + 3.0

Check tolerance
cm³/1000S. : + 6.0

Speed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1131
guide sleeve
travel mm : 8.61
Tolerance mm : + 0.15

Rated speed rpm : 325
guide sleeve
travel mm : 2.04
Tolerance mm : + 0.20

Rated speed rpm : 1038
guide sleeve
travel mm : 7.03
Tolerance mm : + 0.25

Rated speed rpm : 490
guide sleeve
travel mm : 4.65
Tolerance mm : + 0.25

Rated speed rpm : 1300
guide sleeve
travel mm : 11.50
Tolerance mm : + 0.50

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1190

Rack travel in mm : 8.30
Tolerance mm : + 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700
Aneroid pressure
hPa : 1500

Del. quantity
cm³/1000 strokes : 258.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 4.0

Speed

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 11.0

CONTROL LEVER

control lever
position degree : 63.0
tolerance degree : + 4.0

control lever
position degree : 117.0
tolerance degree : + 4.0

RATED SPEED

rack travel mm : 11.10
Rated speed rpm : 1120
Tolerance 1/min : + 5

rack travel mm : 4.00
Rated speed rpm : 1180
Tolerance 1/min : + 15

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 1260

LOW IDLE

control lever
position degree : 65.0
tolerance degree : \pm 4.0

control lever
position degree : 11.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 225

CRT mm min. : $>$ 7.00

Testing:

Rated speed rpm : 325
rack travel mm : 3.60
Tolerance mm : \pm 0.10

Rated speed rpm : 375

TORQUE CONTROL

Rated speed rpm : 700
rack travel mm : 12.10
Tolerance mm : \pm 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1500
rack travel mm : 12.10
Tolerance mm : \pm 0.05

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 10.00
Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 640
rack travel mm : 1.60
Tolerance mm : \pm 0.20

Pressure hPa : 290
rack travel mm : 0.25
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : -
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 188.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 155.0
Tolerance
cm³/1000 strokes : \pm 15.0
Check tolerance
cm³/1000S. : \pm 19.0

LOW IDLE

Rated speed rpm : 325

Rack travel in mm : 3.60
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 23.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Spreed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 12.08.97
Test oil : ISO 4113
Combination No. : 0 403 476 148
Injection pump
Pump designation : PES6MW100/720RS1131
EP type number : 0 413 406 123
Governor
Governor design. : RSV350...1200MW0A405
Governor no. : 0 420 085 294

Cust. part No. : 0270741802

Customer-spec. information
Customer : MB-NFZ
Motor : OM 366 A
Power KW : 118.0

TEST BENCH REQUIREMENTS

Inlet Line : 3.1
Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1 419 992 198
Inlet press. bar : 1.5
Test nozzle holder
assembly : 1 688 901 101
Opening pressure
bar : 208.5
Tolerance bar : ± 1.5
Test lines : 1 680 750 089
Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 3.75
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1180

Rack travel in mm : 11.65
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 89.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 3.0

Speed

Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 6.0

Rated speed rpm : 350

Rack travel in mm : 6.30

Tolerance mm : ± 0.25

Del. quantity
cm³/1000 strokes : 12.0

Tolerance
cm³/1000 strokes : ± 2.0

Check tolerance
cm³/1000S. : ± 4.5

Spread
Tolerance

cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 5.5

(E) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.65
Tolerance mm : ± 0.35

governor spring
pre-tension
click setting x : 5.25

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1180
Aneroid pressure
hPa : 800

Del. quantity
cm³/1000 strokes : 89.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 3.0

Spread
Tolerance

cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 6.0

CONTROL LEVER

control lever
position degree : 107.0
tolerance degree : ± 4.0

RATED SPEED
rack travel mm : 10.65
Rated speed rpm : 1233
Tolerance 1/min : ± 3

rack travel mm : 4.00
Rated speed rpm : 1290
Tolerance 1/min : ± 5

rack travel mm : 1.00
Tolerance mm : ± 0.70
Rated speed rpm : 1400

LOW IDLE

control lever
position degree : 81.0
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 100

CRT mm min. : > 19.00

Testing:

Rated speed rpm : 350
rack travel mm : 6.30
Tolerance mm : ± 0.25

rack travel mm : 2.00
Rated speed rpm : 450
Tolerance 1/min : ± 30

TORQUE CONTROL

Rated speed rpm : 1180
rack travel mm : 11.65
Tolerance mm : ± 0.05

Rated speed rpm : 800
rack travel mm : 12.00
Tolerance mm : ± 0.10

Rated speed rpm : 1100
rack travel mm : 11.75
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 800
rack travel mm : 12.00
Tolerance mm : \pm 0.10

Rated speed rpm : 500
Pressure hPa : -
Tolerance mm : \pm 0.10

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 350
rack travel mm : 1.10
Tolerance mm : \pm 0.10

Pressure hPa : 275
rack travel mm : 0.65
Tolerance mm : \pm 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 800
Rated speed rpm : 800
Del. quantity
cm³/1000 strokes : 88.0
Tolerance
cm³/1000 strokes : \pm 1.5
Check tolerance
cm³/1000S. : \pm 4.0
Spreed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 7.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 50.0
Tolerance
cm³/1000 strokes : \pm 1.0

M08

Check tolerance
cm³/1000S. : \pm 3.0

STARTING FUEL DELIVERY

Check hydraulic start locking and
unlocking device with 500...1000 hPa.

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 83.0
Tolerance
cm³/1000 strokes : \pm 5.0
Check tolerance
cm³/1000S. : \pm 8.0

LOW IDLE

Rated speed rpm : 350

Rack travel in mm : 6.30
Tolerance mm : \pm 0.25
Del. quantity
cm³/1000 strokes : 12.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Spreed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 5.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 12.08.97
Test oil : ISO 4113
Combination No. : 0 403 476 151
Injection pump
Pump designation : PES6MW100/720RS1131
EP type number : 0 413 406 123
Governor
Governor design. : RSV350...1200MWOA405
Governor no. : 0 420 085 294

Cust. part No. : 0270742302

Customer-spec. information
Customer : MB-NFZ
Motor : OM 366 A
Power KW : 118.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1
Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1 419 992 198
Inlet press. bar : 1.5
Test nozzle holde
assembly : 1 688 901 101
Opening pressure
bar : 208.5
Tolerance bar : ± 1.5
Test lines : 1 680 750 089
Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0
Prestroke mm : 3.75
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10
Rack travel in mm : 10.50
Tolerance mm : ± 1.50
Firing order : 1- 5- 3- 6- 2-
: 4
Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1180
Rack travel in mm : 11.65
Tolerance mm : ± 0.05
Del. quantity
cm³/1000 strokes : 89.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 3.0
Speed

Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 6.0

Rated speed rpm : 350

Rack travel in mm : 6.30

Tolerance mm : ± 0.25

Del. quantity

cm³/1000 strokes : 12.0

Tolerance

cm³/1000 strokes : ± 2.0

Check tolerance

cm³/1000S. : ± 4.5

Speed

Tolerance

cm³/1000 strokes : 3.5

Check tolerance

cm³/1000S. : 5.5

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever

position degree : - 3

Rated speed rpm : 800

Rack travel in mm : 0.65

Tolerance mm : ± 0.35

governor spring

pre-tension

click setting x : 5.25

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1180

Aneroid pressure

hPa : 800

Del. quantity

cm³/1000 strokes : 89.0

Tolerance

cm³/1000 strokes : ± 1.0

Check tolerance

cm³/1000S. : ± 3.0

Speed

Tolerance

cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 6.0

CONTROL LEVER

control lever

position degree : 107.0

tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 10.65

Rated speed rpm : 1233

Tolerance 1/min : ± 3

rack travel mm : 4.00

Rated speed rpm : 1290

Tolerance 1/min : ± 5

rack travel mm : 1.00

Tolerance mm : ± 0.70

Rated speed rpm : 1400

LOW IDLE

control lever

position degree : 81.0

tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 100

CRT mm min. : > 19.00

Testing:

Rated speed rpm : 350

rack travel mm : 6.30

Tolerance mm : ± 0.25

rack travel mm : 2.00

Rated speed rpm : 450

Tolerance 1/min : ± 30

TORQUE CONTROL

Rated speed rpm : 1180

rack travel mm : 11.65

Tolerance mm : ± 0.05

Rated speed rpm : 800

rack travel mm : 12.00

Tolerance mm : ± 0.10

Rated speed rpm : 1100
rack travel mm : 11.75
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 800
rack travel mm : 12.00
Tolerance mm : \pm 0.10

Rated speed rpm : 500
Pressure hPa : -
Tolerance mm : \pm 0.10

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 350
rack travel mm : 1.10
Tolerance mm : \pm 0.10

Pressure hPa : 275
rack travel mm : 0.65
Tolerance mm : \pm 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 800
Rated speed rpm : 800
Del. quantity
cm³/1000 strokes : 88.0
Tolerance
cm³/1000 strokes : \pm 1.5
Check tolerance
cm³/1000S. : \pm 4.0
Speed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 7.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 50.0
Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 3.0

STARTING FUEL DELIVERY

Check hydraulic start locking and
unlocking device with 500...1000 hPa.

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 83.0
Tolerance
cm³/1000 strokes : \pm 5.0
Check tolerance
cm³/1000S. : \pm 8.0

LOW IDLE

Rated speed rpm : 350

Rack travel in mm : 6.30
Tolerance mm : \pm 0.25
Del. quantity
cm³/1000 strokes : 12.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Speed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 5.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 03.07.97
Test oil : ISO 4113

Combination No. : 0 402 736 907

Injection pump
Pump designation : PES6P120A120RS7432
EP type number : 0 412 726 967

Governor
Governor design. : RQV450...1100PA1334K
Governor no. : 0 421 815 549

Cust. part No. : 3931940

Customer-spec. information
Customer : CDC
Motor : 6CTA-A
Power KW : 224.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 2.0
Tolerance bar : ± 0.1

Test nozzle holder
assembly : 1 688 901 103

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

M12

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : ± 1.0

Prestroke mm : 4.40
Tolerance mm : ± 0.03
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

Start of delivery blocking

°NW after s.o.d. : 8.00
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 14.25
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 227.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Spread

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 450

Rack travel in mm : 6.40

Tolerance mm : ± 0.20

Del. quantity
cm³/1000 strokes : 31.0

Tolerance
cm³/1000 strokes : ± 3.0

Check tolerance
cm³/1000S. : ± 5.0

Spread

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1162

guide sleeve
travel mm : 7.49

Tolerance mm : ± 0.15

Rated speed rpm : 450

guide sleeve
travel mm : 1.33

Tolerance mm : ± 0.20

Rated speed rpm : 860

guide sleeve
travel mm : 4.55

Tolerance mm : ± 0.25

Rated speed rpm : 1560

guide sleeve
travel mm : 13.50
Tolerance mm : ± 0.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100

Aneroid pressure
hPa : 900

Del. quantity
cm³/1000 strokes : 227.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Spread

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever

position degree : 117.0

tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 13.20

Rated speed rpm : 1170

Tolerance 1/min : ± 15

rack travel mm : 8.00

Rated speed rpm : 1250

Tolerance 1/min : ± 5

rack travel mm : 0.50

Tolerance mm : ± 0.50

Rated speed rpm : 1350

LOW IDLE

control lever

position degree : 76.5

tolerance degree : ± 4.0

Control lever difference

Grad : 40.5

tolerance degree : ± 6.0

Setting point w/out bumper spring

Rated speed rpm : 375

CRT mm min. : > 7.70

Testing:

Rated speed rpm : 450
rack travel mm : 6.40
Tolerance mm : \pm 0.20

Rated speed rpm : 525

TORQUE CONTROL

Rated speed rpm : 1100
rack travel mm : 14.25
Tolerance mm : \pm 0.05

Rated speed rpm : 750
rack travel mm : 13.55
Tolerance mm : \pm 0.10

Rated speed rpm : 500
rack travel mm : 13.60
Tolerance mm : \pm 0.20

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 1100
Pressure hPa : 900

Rated speed rpm : 1000
Pressure hPa : -
rack travel mm : 12.80
Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 1100

Pressure hPa : 400
rack travel mm : 13.80
Tolerance mm : \pm 0.20

Pressure hPa : 300
rack travel mm : 13.40
Tolerance mm : \pm 0.20

Start interLock

Rated speed rpm : > 100
Rated speed rpm : < 390

Check
speed 1/min : > 80

Check
speed 1/min : < 400

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : 900
Rated speed rpm : 750

Del. quantity
cm³/1000 strokes : 218.0

Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 6.0

Speed
Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

Aneroid pressure

hPa : -
Rated speed rpm : 1000

Del. quantity
cm³/1000 strokes : 183.5

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 3.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 21.00

Tolerance mm : \pm 0.50
Del. quantity

cm³/1000 strokes : 156.0

Tolerance
cm³/1000 strokes : \pm 20.0

Check tolerance
cm³/1000S. : \pm 25.0

LOW IDLE

Rated speed rpm : 450

Rack travel in mm : 6.40
Tolerance mm : \pm 0.20

Del. quantity
cm³/1000 strokes : 31.0

Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : +- 5.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 15.08.97
Test oil : ISO 4113

Combination No. : 0 402 736 911

Injection pump
Pump designation : PES6P120A120RS7370
EP type number : 0 412 726 934

Governor
Governor design. : RQV400...1250PA1212
: -2K
Governor no. : 0 421 815 528

Cust. part No. : 3931537

Customer-spec. information
Customer : CDC
Motor : 6BTA-A
Power KW : 135.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 2.0
Tolerance bar : ± 0.1

Test nozzle holder
assembly : 1 688 901 103

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0
x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : ± 1.0

Prestroke mm : 2.50
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

Start of delivery blocking

*NW after s.o.d. : 7.00
Tolerance : ± 0.50
Check
tolerance *NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1250

Rack travel in mm : 13.85
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 170.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Speed

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 13.0

Rated speed rpm : 460

Rack travel in mm : 5.40

Tolerance mm : ± 0.20

Del. quantity
cm³/1000 strokes : 13.5

Tolerance
cm³/1000 strokes : ± 3.0

Check tolerance
cm³/1000S. : ± 5.0

Speed

Tolerance
cm³/1000 strokes : 3.0

Check tolerance
cm³/1000S. : 5.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1412
guide sleeve

travel mm : 9.88

Tolerance mm : ± 0.15

Rated speed rpm : 420

guide sleeve

travel mm : 1.56

Tolerance mm : ± 0.20

Rated speed rpm : 1020

guide sleeve

travel mm : 5.97

Tolerance mm : ± 0.25

Rated speed rpm : 2000

guide sleeve

travel mm : 13.50

Tolerance mm : ± 0.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1250

Aneroid pressure

hPa : 1200

Del. quantity

cm³/1000 strokes : 170.0

Tolerance

cm³/1000 strokes : ± 1.0

Check tolerance

cm³/1000S. : ± 4.0

Speed

Tolerance

cm³/1000 strokes : 8.0

Check tolerance

cm³/1000S. : 13.0

CONTROL LEVER

control lever

position degree : 114.0

tolerance degree : ± 6.0

RATED SPEED

rack travel mm : 12.80

Rated speed rpm : 1320

Tolerance 1/min : ± 25

rack travel mm : 4.00

Rated speed rpm : 1580

Tolerance 1/min : ± 5

rack travel mm : 0.50

Tolerance mm : ± 0.50

Rated speed rpm : 1700

LOW IDLE

control lever

position degree : 63.5

tolerance degree : ± 6.0

Control lever difference

Grad : 50.5

tolerance degree : ± 6.0

Setting point w/out bumper spring

Rated speed rpm : 300

CRT mm min. : > 7.20

Testing:

Rated speed rpm : 460
rack travel mm : 5.40
Tolerance mm : \pm 0.20

Rated speed rpm : 425

TORQUE CONTROL

Rated speed rpm : 1250
rack travel mm : 13.85
Tolerance mm : \pm 0.05

Rated speed rpm : 800
rack travel mm : 11.80
Tolerance mm : \pm 0.10

Rated speed rpm : 1000
rack travel mm : 12.50
Tolerance mm : \pm 0.20

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 1250
Pressure hPa : 1200

Rated speed rpm : 1250
Pressure hPa : -
rack travel mm : 9.40
Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 1250

Pressure hPa : 440
rack travel mm : 12.55
Tolerance mm : \pm 0.30

Pressure hPa : 265
rack travel mm : 10.80
Tolerance mm : \pm 0.20

Start interlock

Rated speed rpm : $>$ 100
Rated speed rpm : $<$ 315

Check
speed 1/min : $>$ 80
Check
speed 1/min : $<$ 325

M18

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : 1200
Rated speed rpm : 800
Del. quantity
cm³/1000 strokes : 123.5
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 13.0

Aneroid pressure

hPa : -
Rated speed rpm : 1250
Del. quantity
cm³/1000 strokes : 96.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 11.70
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 157.0
Tolerance
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000S. : \pm 25.0

LOW IDLE

Rated speed rpm : 460
Rack travel in mm : 5.40
Tolerance mm : \pm 0.20
Del. quantity
cm³/1000 strokes : 13.5
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 5.0

Speed
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000S. : 5.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 15.08.97
Test oil : ISO 4113

Combination No. : 0 402 736 912

Injection pump
Pump designation : PES6P120A120RS7370
EP type number : 0 412 726 934

Governor
Governor design. : RQV400...1250PA1212
: -3K
Governor no. : 0 421 815 529

Cust. part No. : 3931539

Customer-spec. information
Customer : CDC
Motor : 6BTA-A
Power KW : 134.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 2.0
Tolerance bar : ± 0.1

Test nozzle holder
assembly : 1 688 901 103

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 015

M20

Outside diameter : 6.0
x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : ± 1.0

Prestroke mm : 2.50
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

Start of delivery blocking

*NW after s.o.d. : 7.00
Tolerance : ± 0.50
Check
tolerance *NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1250

Rack travel in mm : 13.85
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 170.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Spread

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 13.0

Rated speed rpm : 460

Rack travel in mm : 5.40
Tolerance mm : ± 0.20

Del. quantity
cm³/1000 strokes : 13.5

Tolerance
cm³/1000 strokes : ± 3.0

Check tolerance
cm³/1000S. : ± 5.0

Spread

Tolerance
cm³/1000 strokes : 3.0

Check tolerance
cm³/1000S. : 5.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1412
guide sleeve

travel mm : 9.88
Tolerance mm : ± 0.15

Rated speed rpm : 420
guide sleeve

travel mm : 1.56
Tolerance mm : ± 0.20

Rated speed rpm : 1020
guide sleeve

travel mm : 5.97
Tolerance mm : ± 0.25

Rated speed rpm : 2000
guide sleeve

travel mm : 13.50

M21

Tolerance mm : ± 0.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1250

Aneroid pressure
hPa : 1200

Del. quantity
cm³/1000 strokes : 170.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Spread

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 13.0

CONTROL LEVER

control lever
position degree : 114.0

tolerance degree : ± 6.0

RATED SPEED

rack travel mm : 12.80

Rated speed rpm : 1320

Tolerance 1/min : ± 25

rack travel mm : 4.00

Rated speed rpm : 1580

Tolerance 1/min : ± 5

rack travel mm : 0.50

Tolerance mm : ± 0.50

Rated speed rpm : 1700

LOW IDLE

control lever
position degree : 62.5

tolerance degree : ± 6.0

Control lever difference

Grad : 51.5

tolerance degree : ± 6.0

Setting point w/out bumper spring

Rated speed rpm : 300

CRT mm min. : > 7.20

Testing:

Rated speed rpm : 460
rack travel mm : 5.40
Tolerance mm : \pm 0.20

Rated speed rpm : 425

TORQUE CONTROL

Rated speed rpm : 1250
rack travel mm : 13.85
Tolerance mm : \pm 0.05

Rated speed rpm : 800
rack travel mm : 11.80
Tolerance mm : \pm 0.10

Rated speed rpm : 1000
rack travel mm : 12.50
Tolerance mm : \pm 0.20

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 1250
Pressure hPa : 1200

Rated speed rpm : 1250
Pressure hPa : -
rack travel mm : 9.10
Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 1250
Pressure hPa : 440
rack travel mm : 11.70
Tolerance mm : \pm 0.30

Pressure hPa : 265
rack travel mm : 10.00
Tolerance mm : \pm 0.20

Start interlock

Rated speed rpm : $>$ 100
Rated speed rpm : $<$ 315

Check
speed 1/min : $>$ 80
Check
speed 1/min : $<$ 325

M22

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 800
Del. quantity
cm³/1000 strokes : 123.5
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000s. : \pm 6.0
Spread
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000s. : 13.0

Aneroid pressure
hPa : -
Rated speed rpm : 1250
Del. quantity
cm³/1000 strokes : 90.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000s. : \pm 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 11.70
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 157.0
Tolerance
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000s. : \pm 25.0

LOW IDLE

Rated speed rpm : 460
Rack travel in mm : 5.40
Tolerance mm : \pm 0.20
Del. quantity
cm³/1000 strokes : 13.5
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000s. : \pm 5.0

Speed
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000s. : 5.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 15.08.97
Test oil : ISO 4113

Combination No. : 0 402 736 913

Injection pump
Pump designation : PES6P120A120RS7369
EP type number : 0 412 726 935

Governor
Governor design. : RQV400...1400PA1211
: -1k
Governor no. : 0 421 815 530

Cust. part No. : 3931538

Customer spec. information
Customer : CDC
Motor : 68TA-A
Power KW : 160.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 2.0
Tolerance bar : ± 0.1

Test nozzle holder
assembly : 1 688 901 103

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0
x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : ± 1.0

Prestroke mm : 3.00
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 12.00
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

Start of delivery blocking

*NW after s.o.d. : 6.75
Tolerance : ± 0.50
Check
tolerance *NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1300

Rack travel in mm : 14.45
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 180.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000s. : ± 4.0

Spread

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000s. : 13.0

Rated speed rpm : 435

Rack travel in mm : 5.80

Tolerance mm : ± 0.20

Del. quantity
cm³/1000 strokes : 13.0

Tolerance
cm³/1000 strokes : ± 3.0

Check tolerance
cm³/1000s. : ± 5.0

Spread

Tolerance
cm³/1000 strokes : 3.0

Check tolerance
cm³/1000s. : 5.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1410

guide sleeve

travel mm : 8.73

Tolerance mm : ± 0.25

Rated speed rpm : 400

guide sleeve

travel mm : 2.01

Tolerance mm : ± 0.25

Rated speed rpm : 1488

guide sleeve

travel mm : 9.53

Tolerance mm : ± 0.25

Rated speed rpm : 462

guide sleeve

travel mm : 2.91

Tolerance mm : ± 0.25

Rated speed rpm : 512

guide sleeve

travel mm : 3.37

Tolerance mm : ± 0.25

Rated speed rpm : 1000

guide sleeve

travel mm : 5.53

Tolerance mm : ± 0.25

Rated speed rpm : 2130

guide sleeve

travel mm : 13.50

Tolerance mm : ± 0.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1300

Aneroid pressure

hPa : 1500

Del. quantity

cm³/1000 strokes : 180.0

Tolerance

cm³/1000 strokes : ± 1.0

Check tolerance

cm³/1000s. : ± 4.0

Spread

Tolerance

cm³/1000 strokes : 8.0

Check tolerance

cm³/1000s. : 13.0

CONTROL LEVER

control lever

position degree : 118.0

tolerance degree : ± 6.0

RATED SPEED

rack travel mm : 13.40

Rated speed rpm : 1450

Tolerance 1/min : ± 25

rack travel mm : 5.50

Rated speed rpm : 1650

Tolerance 1/min : ± 5

rack travel mm : 0.50

Tolerance mm : ± 0.50

Rated speed rpm : 1875

LOW IDLE

control lever
position degree : 68.0
tolerance degree : \pm 6.0

Control lever difference
Grad : 50.0
tolerance degree : \pm 6.0

Setting point w/out bumper spring

Rated speed rpm : 300
CRT mm min. : $>$ 8.70

Testing:

Rated speed rpm : 435
rack travel mm : 5.80
Tolerance mm : \pm 0.20

Rated speed rpm : 425

TORQUE CONTROL

Rated speed rpm : 1300
rack travel mm : 14.45
Tolerance mm : \pm 0.05

Rated speed rpm : 800
rack travel mm : 11.80
Tolerance mm : \pm 0.20

Rated speed rpm : 1100
rack travel mm : 13.30
Tolerance mm : \pm 0.20

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 1300
Pressure hPa : 1500

Rated speed rpm : 1300
Pressure hPa : -
rack travel mm : 9.60
Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 1300
Pressure hPa : 965
rack travel mm : 13.10
Tolerance mm : \pm 0.30

Pressure hPa : 390
rack travel mm : 10.80
Tolerance mm : \pm 0.20

Start interlock

Rated speed rpm : $>$ 100
Rated speed rpm : $<$ 340

Check
speed 1/min : $>$ 80
Check
speed 1/min : $<$ 350

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : 1500
Rated speed rpm : 800
Del. quantity
cm³/1000 strokes : 118.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 13.0

Aneroid pressure

hPa : -
Rated speed rpm : 1300
Del. quantity
cm³/1000 strokes : 79.5
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 12.80
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 157.0
Tolerance
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000S. : \pm 25.0

LOW IDLE

Rated speed rpm : 435

Rack travel in mm : 5.80
Tolerance mm : \pm 0.20

Del. quantity
cm³/1000 strokes : 13.0
Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 5.0

Speed
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000S. : 5.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 11.09.95
Test oil : ISO 4113

Combination No. : 0 402 776 818

Injection pump
Pump designation : PES6P120A720RS7382
EP type number : 0 412 726 943

Governor
Governor design. : RSV400...1100POA547
: -5
Governor no. : 0 421 833 481

Cust. part No. : RE62686

Customer spec. information

Customer : DEERE
Motor : 6081 HF001
Power kW : 224.0

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 079

Inlet press. bar : 2.0

Test nozzle holde
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

M28

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : ± 1.0

Prestroke mm : 3.60
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

Start of delivery mark

*NW after s.o.d. : 9.75
Tolerance : ± 0.50
Check
tolerance *NW : ± 0.75

Barrel no. : 1

Beginning of delivery differende

and maximum rack
travel : 14.00
Difference * CS : 2.50

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 12.10
Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 202.5

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Spread

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 400

Rack travel in mm : 5.50
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 20.5

Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 5.0

Spread

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : \pm 0.20

governor spring
pre-tension
click setting x : 4.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100
Aneroid pressure

hPa : 1300

Del. quantity
cm³/1000 strokes : 202.5

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Spread

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 96.0
tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 11.10
Rated speed rpm : 1155

Tolerance 1/min : \pm 5

rack travel mm : 4.00
Rated speed rpm : 1210

Tolerance 1/min : \pm 5

rack travel mm : 0.85
Tolerance mm : \pm 0.55

Rated speed rpm : 1300

rack travel mm : 4.00
Rated speed rpm : 1215

Tolerance 1/min : \pm 15

LOW IDLE

control lever
position degree : 73.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 400
rack travel mm : 5.00

Tolerance mm : \pm 0.10

Rated speed rpm : 100
CRT mm min. : > 19.00

Testing:

Rated speed rpm : 400
rack travel mm : 5.50
Tolerance mm : \pm 0.10

TORQUE CONTROL

Rated speed rpm : 1100
rack travel mm : 12.10
Tolerance mm : \pm 0.05

Rated speed rpm : 700
rack travel mm : 12.85
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1300

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 9.35
Tolerance mm : \pm 0.10

MEASUREMENT

Rated speed rpm : 500
Pressure hPa : 900
rack travel mm : 12.00
Tolerance mm : \pm 0.20

Pressure hPa : 450
rack travel mm : 10.20
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1300
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 224.5
Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 6.0

Aneroid pressure
hPa : -

Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 103.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 105.0
Tolerance
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000S. : \pm 25.0

LOW IDLE

Rated speed rpm : 400
Rack travel in mm : 5.50
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 20.5
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 5.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 14.11.95
Test oil : ISO 4113

Combination No. : 0 402 776 820

Injection pump
Pump designation : PES6P120A720RS7382
EP type number : 0 412 726 943

Governor
Governor design. : RSV400...110CP0A547
: -6
Governor no. : 0 421 833 488

Cust. part No. : RE62648

Customer-spec. information
Customer : DEERE
Motor : 6081 AF001
Power KW : 205.0

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 079

Inlet press. bar : 2.0

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test Lines : 1 680 750 015

Outside diameter : 6.0

N03

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : ± 1.0

Prestroke mm : 3.60
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

Start of delivery mark

*NW after s.o.d. : 7.50
Tolerance : ± 0.50
Check
tolerance *NW : ± 0.75

Barrel no. : 1

Beginning of delivery difference

and maximum rack
travel : 14.00
Difference * CS : 2.50

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 11.70
Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 191.5

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Speed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 400

Rack travel in mm : 5.50
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 20.5

Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 5.0

Speed

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3

governor spring
pre-tension
click setting x : 3.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100

NO4

Aneroid pressure
hPa : 1300
Del. quantity
cm³/1000 strokes : 191.5
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0
Speed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 95.0
tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 10.70
Rated speed rpm : 1155
Tolerance 1/min : \pm 5

rack travel mm : 4.00
Rated speed rpm : 1210
Tolerance 1/min : \pm 5

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 1280

rack travel mm : 4.00
Rated speed rpm : 1225
Tolerance 1/min : \pm 15

LOW IDLE

control lever
position degree : 72.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 400
rack travel mm : 5.00
Tolerance mm : \pm 0.10

Rated speed rpm : 100

CRT mm min. : > 19.00

Testing:

Rated speed rpm : 400
rack travel mm : 5.50
Tolerance mm : \pm 0.10

TORQUE CONTROL

Rated speed rpm : 1100
rack travel mm : 11.70
Tolerance mm : \pm 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1300

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 8.70
Tolerance mm : \pm 0.10

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 740
rack travel mm : 11.10
Tolerance mm : \pm 0.20

Pressure hPa : 380
rack travel mm : 9.50
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 92.5
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : \pm 0.50

Del. quantity
cm³/1000 strokes : 105.0
Tolerance
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000S. : \pm 25.0

LOW IDLE

Rated speed rpm : 400

Rack travel in mm : 5.50
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 20.5

Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 5.0

Speed
Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 14.11.95
Test oil : ISO 4113

Combination No. : 0 402 776 825

Injection pump
Pump designation : PES6P120A720RS7382
EP type number : 0 412 726 943

Governor
Governor design. : RSV400...1100POA574
: -?
Governor no. : 0 421 833 496

Cust. part No. : RE63768

Customer-spec. information
Customer : DEERE
Motor : 6081 AF001
Power KW : 205.0

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 079

Inlet press. bar : 2.0

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

N06

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : ± 1.0

Prestroke mm : 3.60
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

Start of delivery mark

*NW after s.o.d. : 7.50
Tolerance : ± 0.50
Check
tolerance *NW : ± 0.75

Barrel no. : 1

Beginning of delivery difference

and maximum rack
travel : 14.00
Difference * CS : 2.50

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 11.70
Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 191.5

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Spread

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 400

Rack travel in mm : 5.50
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 20.5

Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 5.0

Spread

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3

governor spring
pre-tension
click setting x : 3.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100

N07

Aneroid pressure
hPa : 1300
Del. quantity
cm³/1000 strokes : 191.5
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0
Spread
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 95.0
tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 10.70
Rated speed rpm : 1155
Tolerance 1/min : \pm 5

rack travel mm : 4.00
Rated speed rpm : 1210
Tolerance 1/min : \pm 5

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 1280

rack travel mm : 4.00
Rated speed rpm : 1225
Tolerance 1/min : \pm 15

LOW IDLE

control lever
position degree : 72.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 400
rack travel mm : 5.00
Tolerance mm : \pm 0.10

Rated speed rpm : 100

CRT mm min. : > 19.00

Testing:

Rated speed rpm : 400
rack travel mm : 5.50
Tolerance mm : \pm 0.10

TORQUE CONTROL

Rated speed rpm : 1100
rack travel mm : 11.70
Tolerance mm : \pm 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1300

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 8.70
Tolerance mm : \pm 0.10

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 740
rack travel mm : 11.10
Tolerance mm : \pm 0.20

Pressure hPa : 380
rack travel mm : 9.50
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 92.5
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000s. : \pm 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : \pm 0.50

Del. quantity
cm³/1000 strokes : 105.0
Tolerance
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000s. : \pm 25.0

LOW IDLE

Rated speed rpm : 400

Rack travel in mm : 5.50
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 20.5
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000s. : \pm 5.0

Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000s. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 12.09.95
Test oil : ISO 4113

Combination No. : 0 402 776 826

Injection pump
Pump designation : PES6P120A720RS7382
EP type number : 0 412 726 943

Governor
Governor design. : RSV400...1100POA547
: -8
Governor no. : 0 421 833 498

Cust. part No. : RE63769

Customer-spec. information
Customer : DEERE
Motor : 6081 HF001
Power KW : 224.0

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 079

Inlet press. bar : 2.0

Test nozzle holde
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

NO9

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : ± 1.0

Prestroke mm : 3.60
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

Start of delivery mark

*NW after s.o.d. : 9.75
Tolerance : ± 0.50
Check
tolerance *NW : ± 0.75

Barrel no. : 1

Beginning of delivery differende

and maximum rack
travel : 14.00
Difference * CS : 2.50

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 12.10
Tolerance mm : + 0.05

Del. quantity
cm³/1000 strokes : 202.5

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 4.0

Spread

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 400

Rack travel in mm : 5.50
Tolerance mm : + 0.10

Del. quantity
cm³/1000 strokes : 20.5

Tolerance
cm³/1000 strokes : + 3.0

Check tolerance
cm³/1000S. : + 5.0

Spread

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3

governor spring
pre-tension
click setting x : 4.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100

N10

Aneroid pressure
hPa : 1300
Del. quantity
cm³/1000 strokes : 202.5
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 4.0
Spread
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 96.0
tolerance degree : + 4.0

RATED SPEED

rack travel mm : 11.10
Rated speed rpm : 1155
Tolerance 1/min : + 5

rack travel mm : 4.00
Rated speed rpm : 1210
Tolerance 1/min : + 5

rack travel mm : 0.85
Tolerance mm : + 0.55
Rated speed rpm : 1300

rack travel mm : 4.00
Rated speed rpm : 1215
Tolerance 1/min : + 15

LOW IDLE

control lever
position degree : 73.0
tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 400
rack travel mm : 5.00
Tolerance mm : + 0.10

Rated speed rpm : 100

CRT mm min. : > 19.00

Testing:

Rated speed rpm : 400
rack travel mm : 5.50
Tolerance mm : \pm 0.10

TORQUE CONTROL

Rated speed rpm : 1100
rack travel mm : 12.10
Tolerance mm : \pm 0.05

Rated speed rpm : 700
rack travel mm : 12.85
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1300

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 9.35
Tolerance mm : \pm 0.10

MEASUREMENT

Rated speed rpm : 500
Pressure hPa : 900
rack travel mm : 12.00
Tolerance mm : \pm 0.20

Pressure hPa : 450
rack travel mm : 10.20
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1300
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 224.5
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0

Aneroid pressure
hPa : -

N11

Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 103.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 105.0
Tolerance
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000S. : \pm 25.0

LOW IDLE

Rated speed rpm : 400
Rack travel in mm : 5.50
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 20.5
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 5.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 09.01.96
Test oil : ISO 4113

Combination No. : 0 402 776 827

Injection pump
Pump designation : PES6P120A720RS7399
EP type number : 0 412 726 951

Governor
Governor design. : RSV475...1000POA547
: -9
Governor no. : 0 421 833 506

Cust. part No. : RE65507

Customer-spec. information
Customer : DEERE
Motor : 6101 AT010
Power KW : 221.0

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 079

Inlet press. bar : 2.0

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

N12

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : ± 1.0

Prestroke mm : 3.60
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

Start of delivery mark

*NW after s.o.d. : 7.00
Tolerance : ± 0.50
Check
tolerance *NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 13.45
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 235.5

Tolerance	
cm ³ /1000 strokes	: + 1.0
Check tolerance	
cm ³ /1000S.	: + 4.0
Spread	
Tolerance	
cm ³ /1000 strokes	: 5.0
Check tolerance	
cm ³ /1000S.	: 9.0

Rated speed rpm	: 525
Rack travel in mm	: 5.60
Tolerance mm	: + 0.10
Del. quantity	
cm ³ /1000 strokes	: 21.5
Tolerance	
cm ³ /1000 strokes	: + 3.0
Check tolerance	
cm ³ /1000S.	: + 5.0
Spread	
Tolerance	
cm ³ /1000 strokes	: 8.0
Check tolerance	
cm ³ /1000S.	: 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever	
position degree	: - 3
Rated speed rpm	: 800
Rack travel in mm	: 0.50
Tolerance mm	: + 0.20
governor spring	
pre-tension	
click setting x	: 3.25

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm	: 1000
Aneroid pressure	
hPa	: 1600

Del. quantity	
cm ³ /1000 strokes	: 235.5
Tolerance	
cm ³ /1000 strokes	: + 1.0
Check tolerance	
cm ³ /1000S.	: + 4.0
Spread	
Tolerance	
cm ³ /1000 strokes	: 5.0
Check tolerance	
cm ³ /1000S.	: 9.0

CONTROL LEVER

control lever	
position degree	: 90.0
tolerance degree	: + 4.0

RATED SPEED

rack travel mm	: 12.40
Rated speed rpm	: 1060
Tolerance 1/min	: + 5

rack travel mm	: 4.00
Rated speed rpm	: 1125
Tolerance 1/min	: + 5

rack travel mm	: 0.85
Tolerance mm	: + 0.55
Rated speed rpm	: 1200

rack travel mm	: 4.00
Rated speed rpm	: 1145
Tolerance 1/min	: + 15

LOW IDLE

control lever	
position degree	: 74.0
tolerance degree	: + 4.0

Setting point w/out bumper spring

Rated speed rpm	: 525
rack travel mm	: 5.10
Tolerance mm	: + 0.10

Rated speed rpm	: 100
-----------------	-------

CRT mm min.	: > 19.00
-------------	-----------

Testing:

Rated speed rpm	: 525
-----------------	-------

rack travel mm : 5.60
Tolerance mm : \pm 0.10

TORQUE CONTROL

Rated speed rpm : 1000
rack travel mm : 13.45
Tolerance mm : \pm 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1600

Rated speed rpm : 500
Pressure hPa : --
rack travel mm : 9.75
Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 1000
rack travel mm : 12.40
Tolerance mm : \pm 0.20

Pressure hPa : 590
rack travel mm : 10.60
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : --
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 101.5
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 105.0

Tolerance
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000S. : \pm 25.0

LOW IDLE

Rated speed rpm : 525

Rack travel in mm : 5.60
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 21.5
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 5.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 25.04.96
Test oil : ISO 4113

Combination No. : 0 402 776 828

Injection pump
Pump designation : PES6P120A720RS7403
EP type number : 0 412 726 952

Governor
Governor design. : RSV400...1050POA547
 : -10
Governor no. : 0 421 833 507

Cust. part No. : RE64818

Customer-spec. information
Customer : DEERE
Motor : 6101 HF001
Power KW : 280.0

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 079

Inlet press. bar : 2.0

Test nozzle holde
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : ± 1.0

Prestroke mm : 3.60
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
 : 4

Phasing : 0-60-120-180-240
 : -30C

Start of delivery mark

*NW after s.o.d. : 9.50
Tolerance : ± 0.50
Check
tolerance *NW : ± 0.75

Barrel no. : 1

Beginning of delivery differende

and maximum rack
travel : 14.00
Difference * CS : 3.75

BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm : 13.65
Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 247.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Speed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 400

Rack travel in mm : 6.00
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 30.0

Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 5.0

Speed

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3

governor spring
pre-tension
click setting x : 3.25

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1050

Aneroid pressure
hPa : 1800

Del. quantity
cm³/1000 strokes : 247.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Speed
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 92.0

tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 12.65

Rated speed rpm : 1100

Tolerance 1/min : \pm 5

rack travel mm : 4.00

Rated speed rpm : 1165

Tolerance 1/min : \pm 5

rack travel mm : 0.85

Tolerance mm : \pm 0.55

Rated speed rpm : 1250

rack travel mm : 4.00

Rated speed rpm : 1175

Tolerance 1/min : \pm 15

LOW IDLE

control lever
position degree : 71.0

tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 400

rack travel mm : 5.50

Tolerance mm : \pm 0.10

Rated speed rpm : 100

CRT mm min. : > 19.00

Testing:

Rated speed rpm : 400
rack travel mm : 6.00
Tolerance mm : \pm 0.10

TORQUE CONTROL

Rated speed rpm : 1050
rack travel mm : 13.65
Tolerance mm : \pm 0.05

Rated speed rpm : 800
rack travel mm : 14.10
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1800

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 9.50
Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 500
Pressure hPa : 1110
rack travel mm : 12.95
Tolerance mm : \pm 0.20

Pressure hPa : 610
rack travel mm : 10.65
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1800
Rated speed rpm : 800
Del. quantity
cm³/1000 strokes : 272.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0

Aneroid pressure
hPa : -

N17

Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 109.5
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 21.00
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 105.0
Tolerance
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000S. : \pm 25.0

LOW IDLE

Rated speed rpm : 400
Rack travel in mm : 6.00
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 30.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 5.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 14.08.97
Test oil : ISO 4113

Combination No. : 0 402 796 206

Injection pump
Pump designation : PES6H120/720RS1007
: -1
EP type number : 0 412 726 209

Governor
Governor design. : RE33
Governor no. : 0 421 890 366

Cust. part No. : 309 4348

Customer-spec. information
Customer : CUMMINS
Motor : QST30
Power KW : 783.0

TEST BENCH REQUIREMENTS

Inlet line : EHAB

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 082

Inlet press. bar : 3.0

Test nozzle holder
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

Pump-specific values
in Section (B)
must be observed!

(A) INJECTION PUMP SETTINGS
No basic setting.
Setting of constant delivery
under Section C.

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : ± 1.0

Prestroke mm : 7.60
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 0.50

Prestroke mm : 9.95
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery blocking

Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

(B) POSITIONER TESTING

Warm-up time: 3 minutes at
n=600 min⁻¹, Uact = 2.5 V

TESTING & SETTING RACK TRAVEL SENSOR POSITION

Engine speed min⁻¹: 0

Setting point
(P, R and H pump)

Uact V : 3.100
CRT mm : 13.00
Tolerance mm : +/- 0.05
Check
tolerance mm : +/- 0.10

Check value
(P, R and H pump)

Uact V : 1.700
CRT mm : 6.15
Tolerance mm : +/- 0.25
Check
tolerance mm : +/- 0.30

Setting point
(M pump)

Uact V : 3.100
CRT mm : 12.50
Tolerance mm : +/- 0.05
Check
tolerance mm : +/- 0.10

Check value
(M pump)

Uact V : 1.700
CRT mm : 5.50
Tolerance mm : +/- 0.25
Check
tolerance mm : +/- 0.30

Stop position

Uact V : Value with
deenergised adjusting magnet
and control rod in
stop position.

CRT mm : 0.75
Tolerance mm : +/- 0.25
Check
tolerance mm : +/- 0.35

ENGINE-SPEED SENSOR
(All P and R pumps not
H and M pumps)

Test with control rod
in stop position

Engine speed min⁻¹: 60
Amplitude V : 1.4
Tolerance V : +/- 0.6
Check
tolerance V : +/- 1.20

Engine speed min⁻¹: 600
Difference
Amplitude to
Amplitude V : max.1.4

(C) INJECTION PUMP WITH POSITIONER

TEST POINT V1

Rated speed rpm : 1050
Uact V : 3.315
Del. quantity
cm³/1000 strokes : 358.0
Tolerance
cm³/1000 strokes : +/- 1.0
Check tolerance
cm³/1000S. : +/- 4.0
Speed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0
FUEL DELIVERY CHARACTERISTICS

Rated speed rpm : 750
Uact V : 3.350
Del. quantity
cm³/1000 strokes : 386.0
Tolerance
cm³/1000 strokes : +/- 3.0
Check tolerance
cm³/1000S. : +/- 6.0

TEST POINT L1

Rated speed rpm : 300
Uact V : 1.400
Tolerance Volt : +/- 0.060

Check tolerance
Volt : \pm 0.060
Del. quantity
cm³/1000 strokes : 38.0
Tolerance
cm³/1000 strokes : \pm 3.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Uact V : 2.450
Del. quantity
cm³/1000 strokes : 255.0
Check tolerance
cm³/1000S. : \pm 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 14.08.97
Test oil : ISO 4113
Combination No. : 0 402 796 207
Injection pump
Pump designation : PES6H120/32ORS1008
: -1
EP type number : 0 412 726 208
Governor
Governor design. : RE33
Governor no. : 0 421 890 367
Cust. part No. : 309 4347

Customer-spec. information
Customer : CUMMINS
Motor : QST30
Power kW : 783.0

TEST BENCH REQUIREMENTS

Inlet line : EHAB
Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 2 417 413 082
Inlet press. bar : 3.0
Tolerance bar : ± 0.1
Test nozzle holder
assembly : 1 688 901 105
Opening pressure
bar : 208.5
Tolerance bar : ± 1.5
Test lines : 1 680 750 089

Outside diameter : 8.0
x inside diameter : 3.0
x length mm : 600

REMARKS

Pump-specific values
in Section (B)
must be observed!

(A) INJECTION PUMP SETTINGS
No basic setting.
Setting of constant delivery
under Section C.

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : ± 1.0

Prestroke mm : 7.60
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 0.50

Prestroke mm : 9.95
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery blocking

*NW after s.o.d. : 25.00

Tolerance : \pm 0.50
Check
tolerance *NW : \pm 0.75
Barrel no. : 1

(B) POSITIONER TESTING

Warm-up time: 3 minutes at
 $n=600$ min⁻¹, Uact = 2.5 V

TESTING & SETTING RACK TRAVEL SENSOR
POSITION

Engine speed min⁻¹: 0

Setting point
(P, R and H pump)

Uact V : 3.100
CRT mm : 13.00
Tolerance mm : \pm 0.05
Check
tolerance mm : \pm 0.10

Check value
(P, R and H pump)

Uact V : 1.700
CRT mm : 6.15
Tolerance mm : \pm 0.25
Check
tolerance mm : \pm 0.30

Setting point
(M pump)

Uact V : 3.100
CRT mm : 12.50
Tolerance mm : \pm 0.05
Check
tolerance mm : \pm 0.10

Check value
(M pump)

Uact V : 1.700
CRT mm : 5.50
Tolerance mm : \pm 0.25
Check
tolerance mm : \pm 0.30

Stop position

Uact V : Value with

N22

deenergised adjusting magnet
and control rod in
stop position.

CRT mm : 0.75
Tolerance mm : \pm 0.25
Check
tolerance mm : \pm 0.35

ENGINE-SPEED SENSOR
(ALL P and R pumps not
H and M pumps)

Test with control rod
in stop position

Engine speed min⁻¹: 60
Amplitude V : 1.4
Tolerance V : \pm 0.6
Check
tolerance V : \pm 1.20

Engine speed min⁻¹: 600
Difference
Amplitude to
Amplitude V : max.1.4

(C) INJECTION PUMP WITH POSITIONER

TEST POINT V1

Rated speed rpm : 1050
Uact V : 3.315
Del. quantity
cm³/1000 strokes : 358.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0
Spread
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0
FUEL DELIVERY CHARACTERISTICS

Rated speed rpm : 750
Uact V : 3.350
Del. quantity
cm³/1000 strokes : 386.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0

TEST POINT L1

Rated speed rpm : 300
Uact V : 1.400
Tolerance Volt : \pm 0.060
Check tolerance
Volt : \pm 0.060
Del. quantity
cm³/1000 strokes : 38.0
Tolerance
cm³/1000 strokes : \pm 3.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Uact V : 2.450
Del. quantity
cm³/1000 strokes : 255.0
Check tolerance
cm³/1000S. : \pm 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 25.07.97
Test oil : ISO 4113
Combination No. : 0 402 796 812
Injection pump
Pump designation : PES6P120A720RS7315
EP type number : 0 412 726 902
Governor
Governor design. : RE30
Governor no. : 0 421 890 017

Cust. part No. : RE 57373

Customer-spec. information
Customer : DEERE
Motor : 6081
Power KW : 205.0

TEST BENCH REQUIREMENTS

Inlet line : 4.2
Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0
Overflow valve : 2 417 413 077
Inlet press. bar : 1.5
Tolerance bar : + 0.1
Test nozzle holder
assembly : 1 688 901 103
Opening pressure
bar : 208.5
Tolerance bar : + 1.5
Test Lines : 1 680 750 089
Outside diameter : 8.0

N24

x inside diameter : 3.0
x length mm : 600

REMARKS

Pump-specific values
in Section (B)
must be observed!

(A) INJECTION PUMP SETTINGS
No basic setting.
Setting of constant delivery
under Section C.

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0
Firing order : 1- 5- 3- 6- 2-
: 4
Phasing : 0-60-120-180-240
: -300

(B) POSITIONER TESTING
Warm-up time: 3 minutes at
n=600 min⁻¹, Uact = 2.5 V

TESTING & SETTING RACK TRAVEL SENSOR POSITION

Engine speed min⁻¹: 0
Setting point
(P, R and H pump)
Uact V : 3.100
CRT mm : 13.00
Tolerance mm : +/- 0.05
Check
tolerance mm : +/- 0.10
Check value
(P, R and H pump)
Uact V : 1.700

CRT mm : 6.15
Tolerance mm : +/- 0.25
Check
tolerance mm : +/- 0.30

Setting point
(M pump)

Uact V : 3.100
CRT mm : 12.50
Tolerance mm : +/- 0.05
Check
tolerance mm : +/- 0.10

Check value
(M pump)

Uact V : 1.700
CRT mm : 5.50
Tolerance mm : +/- 0.25
Check
tolerance mm : +/- 0.30

Stop position

Uact V : Value with
deenergised adjusting magnet
and control rod in
stop position.

CRT mm : 0.75
Tolerance mm : +/- 0.25
Check
tolerance mm : +/- 0.35

ENGINE-SPEED SENSOR
(ALL P and R pumps not
H and M pumps)

Test with control rod
in stop position

Engine speed min-1: 60
Amplitude V : 1.4
Tolerance V : +/- 0.6
Check
tolerance V : +/- 1.20

Engine speed min-1: 600
Difference
Amplitude to
Amplitude V : max.1.4

(C) INJECTION PUMP WITH POSITIONER

FUEL DELIVERY CHARACTERISTICS

Rated speed rpm : 700
Uact V : 2.940
Del. quantity
cm3/1000 strokes : 237.0
Tolerance
cm3/1000 strokes : + 3.0
Check tolerance
cm3/1000S. : + 6.0
Speed
Tolerance
cm3/1000 strokes : 8.0
Check tolerance
cm3/1000S. : 12.0

TEST POINT L1

Rated speed rpm : 450
Uact V : 1.590
Tolerance Volt : + 0.060
Check tolerance
Volt : + 0.060
Del. quantity
cm3/1000 strokes : 26.0
Tolerance
cm3/1000 strokes : + 3.0
Speed
Tolerance
cm3/1000 strokes : 6.0
Check tolerance
cm3/1000S. : 10.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Uact V : 4.600
Del. quantity
cm3/1000 strokes : 115.0
Tolerance
cm3/1000 strokes : + 20.0
Check tolerance
cm3/1000S. : + 25.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 25.07.97
Test oil : ISO 4113
Combination No. : 0 402 796 817
Injection pump
Pump designation : FES6P120A720RS7405
EP type number : 0 412 726 954
Governor
Governor design. : RE30
Governor no. : 0 421 890 037

Cust. part No. : RE 64862

Customer-spec. information
Customer : DEERE
Motor : 6101AF001
Power KW : 242.0

TEST BENCH REQUIREMENTS

Inlet line : 4.2
Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 2 417 413 077
Inlet press. bar : 2.0
Tolerance bar : ± 0.1
Test nozzle holder
assembly : 1 688 901 103
Opening pressure
bar : 208.5
Tolerance bar : ± 1.5
Test lines : 1 680 750 089
Outside diameter : 8.0

N26

x inside diameter : 3.0
x length mm : 600

REMARKS

Pump-specific values
in Section (B)
must be observed!

(A) INJECTION PUMP SETTINGS
No basic setting.
Setting of constant delivery
under Section C.

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : ± 1.0

Prestroke mm : 3.60
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

*NW after s.o.d. : 7.50
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

Beginning of delivery difference
and maximum rack
travel : 15.00

Difference * CS : 2.50

(B) POSITIONER TESTING

Warm-up time: 3 minutes at
n=600 min⁻¹, Uact = 2.5 V

TESTING & SETTING RACK TRAVEL SENSOR
POSITION

Engine speed min⁻¹: 0

Setting point
(P, R and H pump)

Uact V : 3.100
CRT mm : 13.00
Tolerance mm : +/- 0.05
Check
tolerance mm : +/- 0.10

Check value
(P, R and H pump)

Uact V : 1.700
CRT mm : 6.15
Tolerance mm : +/- 0.25
Check
tolerance mm : +/- 0.30

Setting point
(M pump)

Uact V : 3.100
CRT mm : 12.50
Tolerance mm : +/- 0.05
Check
tolerance mm : +/- 0.10

Check value
(M pump)

Uact V : 1.700
CRT mm : 5.50
Tolerance mm : +/- 0.25
Check
tolerance mm : +/- 0.30

Stop position

Uact V : Value with
deenergised adjusting magnet
and control rod in
stop position.
CRT mm : 0.75

N27

Tolerance mm : +/- 0.25
Check
tolerance mm : +/- 0.35

ENGINE-SPEED SENSOR
(All P and R pumps not
H and M pumps)

Test with control rod
in stop position

Engine speed min⁻¹: 60
Amplitude V : 1.4
Tolerance V : +/- 0.6
Check
tolerance V : +/- 1.20

Engine speed min⁻¹: 600
Difference
Amplitude to
Amplitude V : max. 1.4

(C) INJECTION PUMP WITH POSITIONER

TEST POINT V1

Rated speed rpm : 1050
Uact V : 3.030
Del. quantity
cm³/1000 strokes : 213.0
Tolerance
cm³/1000 strokes : +/- 1.0
Check tolerance
cm³/1000S. : +/- 4.0
Speed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0
FUEL DELIVERY CHARACTERISTICS

Rated speed rpm : 700
Uact V : 3.120
Del. quantity
cm³/1000 strokes : 237.0
Tolerance
cm³/1000 strokes : +/- 3.0
Check tolerance
cm³/1000S. : +/- 6.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

TEST POINT L1

Rated speed rpm : 450
Uact V : 1.740
Tolerance Volt : \pm 0.060
Check tolerance
Volt : \pm 0.060
Del. quantity
cm³/1000 strokes : 26.0
Tolerance
cm³/1000 strokes : \pm 3.0
Speed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 10.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Uact V : 4.550
Del. quantity
cm³/1000 strokes : 120.0
Tolerance
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000S. : \pm 25.0

End of test specification sheet